



**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Parts 60 and 63**

**[EPA-HQ-OAR-2012-0522; FRL-9912-61-OAR]**

**RIN 2060-AQ20**

**Phosphoric Acid Manufacturing and Phosphate Fertilizer  
Production RTR and Standards of Performance for Phosphate  
Processing**

**AGENCY:** Environmental Protection Agency.

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing amendments to the National Emission Standards for Hazardous Air Pollutants for the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production source categories and to new source performance standards (NSPS) for several phosphate processing categories. The proposed amendments address the results of the residual risk and technology reviews (RTR) conducted as required under the Clean Air Act (CAA), as well as other actions deemed appropriate during the review of these standards. The proposed amendments include numeric emission limits for mercury and work practice standards for hydrogen fluoride (HF) from calciners; work practice standards for hazardous air pollutant (HAP) emissions from gypsum dewatering stacks and cooling ponds; emission standards requiring HF testing from various affected

sources; clarifications to the applicability and monitoring requirements for both source categories to accommodate process equipment and technology changes; changes to remove the exemptions for startup, shutdown and malfunction; work practice standards for periods of startup and shutdown; and revised provisions to address recordkeeping and reporting requirements applicable to periods of startup, shutdown and malfunction. The proposed amendments will reduce mercury emissions, thereby reducing potential mercury exposure to children, including the unborn. Further, the EPA has conducted an 8-year review of the current NSPS for these source categories, and is proposing that no revisions to the numeric emission limits for these standards are appropriate.

**DATES:** Comments. Comments must be received on or before **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

A copy of comments on the information collection provisions should be submitted to the Office of Management and Budget (OMB) on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Public Hearing. If anyone contacts the EPA requesting to speak at a public hearing by **[INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, we will hold a public hearing on **[INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE**

**FEDERAL REGISTER]** on the EPA campus at 109 T.W. Alexander Drive, Research Triangle Park, North Carolina.

**ADDRESSES:** Comments. Submit your comments, identified by Docket ID Number EPA-HQ-OAR-2012-0522, by one of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>: Follow the online instructions for submitting comments.
- Email: A-and-R-Docket@epa.gov. Include Attention Docket ID No. EPA-HQ-OAR-2012-0522 in the subject line of the message.
- Fax: (202) 566-9744, Attention Docket ID No. EPA-HQ-OAR-2012-0522.
- Mail: Environmental Protection Agency, EPA Docket Center (EPA/DC), Mail Code 28221T, Attention Docket ID No. EPA-HQ-OAR-2012-0522, 1200 Pennsylvania Ave., NW, Washington, DC 20460. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17<sup>th</sup> Street, NW, Washington, DC 20503.
- Hand/Courier Delivery: EPA Docket Center, Room 3334, EPA WJC Building, 1301 Constitution Ave., NW, Washington, DC 20004, Attention Docket ID Number EPA-HQ-OAR-2012-0522. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions. Direct your comments to Docket ID Number EPA-HQ-OAR-2012-0522. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI

or otherwise protected through <http://www.regulations.gov> or email. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters or any form of encryption and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at: <http://www.epa.gov/dockets>.

Docket. The EPA has established a docket for this rulemaking under Docket ID Number EPA-HQ-OAR-2012-0522. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain

other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue, NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

Public Hearing. If anyone contacts the EPA requesting a public hearing by **[INSERT THE DATE 5 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, the public hearing will be held on **[INSERT THE DATE 15 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER]** at the EPA's campus at 109 T.W. Alexander Drive, Research Triangle Park, North Carolina. The hearing will begin at 10:00 a.m. (Eastern Standard Time) and conclude at 5:00 p.m. (Eastern Standard Time). There will be a lunch break from 12:00 p.m. to 1:00 p.m. Please contact Ms. Pamela Garrett at 919-541-7966 or [garrett.pamela@epa.gov](mailto:garrett.pamela@epa.gov) to register to speak at the hearing, or to inquire about whether a hearing will be held. The last day to pre-register in advance to speak at the hearings will be **[INSERT DATE 12 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**. Additionally, requests to

speakers will be taken the day of the hearing at the hearing registration desk, although preferences on speaking times may not be able to be fulfilled. If you require the service of a translator or special accommodations such as audio description, please let us know at the time of registration. If you require an accommodation, we ask that you pre-register for the hearing, as we may not be able to arrange such accommodations without advance notice.

The hearing will provide interested parties the opportunity to present data, views or arguments concerning the proposed action. The EPA will make every effort to accommodate all speakers who arrive and register. Because this hearing is being held at U.S. government facilities, individuals planning to attend the hearing should be prepared to show valid picture identification to the security staff in order to gain access to the meeting room. Please note that the REAL ID Act, passed by Congress in 2005, established new requirements for entering federal facilities. If your driver's license is issued by Alaska, American Samoa, Arizona, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Montana, New York, Oklahoma or the state of Washington, you must present an additional form of identification to enter the federal building. Acceptable alternative forms of identification include: Federal employee badges, passports, enhanced driver's licenses and military

identification cards. In addition, you will need to obtain a property pass for any personal belongings you bring with you. Upon leaving the building, you will be required to return this property pass to the security desk. No large signs will be allowed in the building, cameras may only be used outside of the building and demonstrations will not be allowed on federal property for security reasons.

The EPA may ask clarifying questions during the oral presentations, but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral comments and supporting information presented at the public hearing. Commenters should notify Ms. Garrett if they will need specific equipment, or if there are other special needs related to providing comments at the hearings. Verbatim transcripts of the hearing and written statements will be included in the docket for the rulemaking. The EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearing to run either ahead of schedule or behind schedule.

Again, a hearing will only be held if requested by [INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

Please contact Ms. Pamela Garrett at 919-541-7966 or at

garrett.pamela@epa.gov or visit

<http://www.epa.gov/ttn/atw/phosph/phosphpg.html>

to determine if a hearing will be held. If the EPA holds a public hearing, the EPA will keep the record of the hearing open for 30 days after completion of the hearing to provide an opportunity for submission of rebuttal and supplementary information.

**FOR FURTHER INFORMATION CONTACT:** For questions about this proposed action, contact Ms. Tina Ndoh, Sector Policies and Programs Division (D243-02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-2750; fax number: (919) 541-5450; and email address: Ndoh.Tina@epa.gov. For specific information regarding the risk modeling methodology, contact James Hirtz, Health and Environmental Impacts Division (C539-02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-0881; fax number: (919) 541-0359; and email address: Hirtz.James@epa.gov. For information about the applicability of the national emissions standards for hazardous air pollutants (NESHAP) or the NSPS to a particular entity, contact Scott Throwe, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, William Jefferson Clinton



Building, Mail Code 2227A, 1200 Pennsylvania Avenue, NW,  
Washington DC 20460; telephone number: (202)562-7013; and email  
address: Throwe.Scott@epa.gov.

**SUPPLEMENTARY INFORMATION:**

**Preamble Acronyms and Abbreviations**

We use multiple acronyms and terms in this preamble. While  
this list may not be exhaustive, to ease the reading of this  
preamble and for reference purposes, the EPA defines the  
following terms and acronyms here:

ACI	Activated carbon injection
AEGL	Acute exposure guideline levels
AERMOD	Air dispersion model used by the HEM-3 model
AFPC	Association of Fertilizer and Phosphate Chemists
AOAC	Association of Official Analytical Chemists
APF	Ammonium phosphate fertilizer
BACT	Best available control technology
BDL	Below the method detection limit
BSER	Best System of Emissions Reduction
CAA	Clean Air Act
CalEPA	California EPA
CA-REL	California Reference Exposure Level
CBI	Confidential Business Information
CDX	Central Data Exchange
CEDRI	Compliance and Emissions Data Reporting Interface
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CPMS	Continuous parameter monitoring system
DAP	Diammonium phosphate
EPA	Environmental Protection Agency
ERPG	Emergency Response Planning Guidelines
ERT	Electronic Reporting Tool
F	Fluoride

FaTE	Fate, Transport, and Ecological Exposure
FR	Federal Register
FTIR	Fourier transform infrared spectroscopy
gr/dscf	Grams per dry standard cubic feet
GTSP	Granular triple superphosphate
H	Hydrogen
HAP	Hazardous air pollutants
HCl	Hydrogen chloride
HEM-3	Human Exposure Model, Version 1.1.0
HF	Hydrogen fluoride
Hg	Mercury
HI	Hazard index
HQ	Hazard quotient
ICR	Information Collection Request
IRIS	Integrated Risk Information System
km	Kilometer
LAER	Lowest achievable emissions rate
LOAEL	Lowest-observed-adverse-effect level
MACT	Maximum achievable control technology
MAP	Monoammonium phosphate
mg/dscm	Milligrams per dry standard cubic meter
mg/kg-day	Milligrams per kilogram-day
mg/m <sup>3</sup>	Milligrams per cubic meter
MIBK	Methyl isobutyl ketone
MIR	Maximum individual risk
MRL	Minimum risk level
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NATA	National Air Toxics Assessment
NEI	National Emissions Inventory
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NOAA	National Oceanic and Atmospheric Administration
NOAEL	No-observed-adverse-effect level
NRC	National Research Council
NTTAA	National Technology Transfer and Advancement Act
OAQPS	Office of Air Quality Planning and Standards
OECA	Office of Enforcement and Compliance Assurance
OMB	Office of Management and Budget

P <sub>2</sub> O <sub>5</sub>	Phosphorus pentoxide
PB-HAP	Hazardous air pollutants known to be persistent and bio-accumulative in the environment
PEL	Probable effect levels
PM	Particulate matter
POM	Polycyclic organic matter
PPA	Purified phosphoric acid
ppm	Parts per million
QA/QC	Quality assurance/quality control
RACT	Reasonably available control technology
RATA	Relative accuracy test audit
RBLC	RACT/BACT/LAER Clearinghouse
REL	Reference exposure level
RFA	Regulatory Flexibility Act
RfC	Reference concentration
RfD	Reference dose
RTR	Residual risk and technology review
SAB	Science Advisory Board
SBA	Small Business Administration
SiF <sub>4</sub>	Silicon tetrafluoride
SPA	Superphosphoric acid
SSM	Startup, shutdown and malfunction
TOSHI	Target organ-specific hazard index
tpy	Tons per year
TRIM	Total Risk Integrated Modeling System
TRIM.FaTE	Total Risk Integrated Methodology.Fate, Transport, and Ecological Exposure model
TTN	Technology Transfer Network
UF	Uncertainty factor
µg/m <sup>3</sup>	Micrograms per cubic meter
UMRA	Unfunded Mandates Reform Act
UPL	Upper prediction limit
URE	Unit risk estimate
VCS	Voluntary consensus standards
WESP	Wet electrostatic precipitator
WPPA	Wet-process phosphoric acid
WWW	World Wide Web

Organization of this Document. The information in this preamble is organized as follows:

**I. General Information**

- A. Does this action apply to me?
- B. Where can I get a copy of this document and other related information?
- C. What should I consider as I prepare my comments for the EPA?

**II. Background**

- A. What are the statutory authorities for this action?
- B. What are the source categories and how do the current NESHAP and NSPS regulate emissions?
- C. What data collection activities were conducted to support this action?
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**III. Analytical Procedures**

- A. How did we estimate post-MACT risks posed by the source categories?
- B. How did we consider the risk results in making decisions for this proposal?
- C. How did we perform the technology reviews for the NESHAP and NSPS?

**IV. Analytical Results and Proposed Decisions for the Phosphoric Acid Manufacturing Source Category**

- A. What actions are we taking pursuant to CAA sections 112(d)(2) and 112(d)(3) for the Phosphoric Acid Manufacturing source category?
- B. What are the results of the risk assessment and analyses for the Phosphoric Acid Manufacturing source category?
- C. What are our proposed decisions regarding risk acceptability, ample margin of safety and adverse environmental effects for the Phosphoric Acid Manufacturing source category?
- D. What are the results and proposed decisions based on our technology review for the Phosphoric Acid Manufacturing source category?
- E. What other actions are we proposing for the Phosphoric Acid Manufacturing source category?
- F. What are the notification, recordkeeping and reporting requirements for the Phosphoric Acid Manufacturing source category?
- G. What compliance dates are we proposing for the Phosphoric Acid Manufacturing source category?

**V. Analytical Results and Proposed Decisions for the Phosphate Fertilizer Production Source Category**

- A. What are the results of the risk assessment and analyses for the Phosphate Fertilizer Production source category?
- B. What are our proposed decisions regarding risk acceptability, ample margin of safety and adverse environmental effects for the Phosphate Fertilizer Production source category?
- C. What are the results and proposed decisions based on our technology review for the Phosphate Fertilizer Production source category?
- D. What other actions are we proposing for the Phosphate Fertilizer Production source category?
- E. What are the notification, recordkeeping and reporting requirements for the Phosphate Fertilizer Production source category?
- F. What compliance dates are we proposing for the Phosphate Fertilizer Production source category?

**VI. Summary of Cost, Environmental and Economic Impacts**

- A. What are the affected sources?
- B. What are the air quality impacts?
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**VII. Request for Comments**

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- A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
- B. Paperwork Reduction Act
- C. Regulatory Flexibility Act
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- E. Executive Order 13132: Federalism
- F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
- G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
- H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
- I. National Technology Transfer and Advancement Act
- J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

**I. General Information**

A. Does this action apply to me?

Table 1 of this preamble lists the industrial source categories that are the subject of this proposal. Table 1 is not intended to be exhaustive but rather to provide a guide for readers regarding the entities that this proposed action is likely to affect. The proposed standards, once promulgated, will be directly applicable to the affected sources. As defined in the "Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990" (see 57 FR 31576, July 16, 1992), the "Phosphoric Acid Manufacturing" source category is any facility engaged in the production of phosphoric acid. The category includes, but is not limited to, production of wet-process phosphoric acid (WPPA) and superphosphoric acid (SPA). The "Phosphate Fertilizer Production" source category includes any facility engaged in the production of phosphate-based fertilizers including, but not limited to, plants with bulk-blend processes, fluid-mix processes or ammonia granulation processes. Examples of phosphate fertilizers are: Monoammonium phosphates (MAP) and diammonium phosphates (DAP) (or ammonium phosphate fertilizer (APF)), and triple superphosphates (TSP).<sup>1</sup>

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<sup>1</sup> U.S. EPA. Documentation for Developing the Initial Source Category List - Final Report, USEPA/OAQPS, EPA-450/3-91-030, July, 1992.

**Table 1. Industrial Source Categories Affected By This Proposed Action**

Source Category	NAICS Code <sup>a</sup>	Examples of Regulated Entities
Industrial	325312	Phosphoric Acid; and Phosphate Fertilizers

<sup>a</sup> North American Industry Classification System

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the Internet through the EPA's Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this proposed action at:

<http://www.epa.gov/ttn/atw/phosph/phosphpg.html>. Following publication in the Federal Register, the EPA will post the Federal Register version of the proposal and key technical documents at the same Web site. Information on the overall residual risk and technology review program is available at the following Web site: <http://www.epa.gov/ttn/atw/rrisk/rtrpg.html>.

C. What should I consider as I prepare my comments for the EPA?

Submitting CBI. Do not submit information containing CBI to the EPA through <http://www.regulations.gov> or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information on a disk or CD-ROM that you mail to

the EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not contain the information claimed as CBI for inclusion in the public docket. If you submit a CD-ROM or disk that does not contain CBI, mark the outside of the disk or CD-ROM clearly that it does not contain CBI. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2. Send or deliver information identified as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention Docket ID Number EPA-HQ-OAR-2012-0522.

## **II. Background**

### A. What are the statutory authorities for this action?

#### 1. NESHAP Authority

Section 112 of the CAA establishes a two-stage regulatory process to address emissions of hazardous air pollutants (HAPs) from stationary sources. In the first stage, after the EPA has



identified categories of sources emitting one or more of the HAP listed in CAA section 112(b), CAA section 112(d) requires us to promulgate technology-based NESHAP for those sources. "Major sources" are those that emit or have the potential to emit 10 tons per year (tpy) or more of a single HAP or 25 tpy or more of any combination of HAPs. For major sources, the technology-based NESHAP must reflect the maximum degree of emission reductions of HAPs achievable (after considering cost, energy requirements and non-air quality health and environmental impacts) and are commonly referred to as maximum achievable control technology (MACT) standards.

MACT standards must reflect the maximum degree of emissions reduction achievable through the application of measures, processes, methods, systems or techniques, including, but not limited to, measures that (1) reduce the volume of or eliminate pollutants through process changes, substitution of materials or other modifications; (2) enclose systems or processes to eliminate emissions; (3) capture or treat pollutants when released from a process, stack, storage or fugitive emissions point; (4) are design, equipment, work practice or operational standards (including requirements for operator training or certification); or (5) are a combination of the above. CAA section 112(d)(2)(A)-(E). The MACT standards may take the form of design, equipment, work practice or operational standards

where the EPA first determines either that (1) a pollutant cannot be emitted through a conveyance designed and constructed to emit or capture the pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with law; or (2) the application of measurement methodology to a particular class of sources is not practicable due to technological and economic limitations. CAA section 112(h)(1)-(2).

The MACT "floor" is the minimum control level allowed for MACT standards promulgated under CAA section 112(d)(3) and may not be based on cost considerations. For new sources, the MACT floor cannot be less stringent than the emissions control that is achieved in practice by the best-controlled similar source. The MACT floor for existing sources can be less stringent than floors for new sources but not less stringent than the average emissions limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT standards, the EPA must also consider control options that are more stringent than the floor. We may establish standards more stringent than the floor based on considerations of the cost of achieving the emission reductions, any non-air quality health and environmental impacts and energy requirements.

The EPA is then required to review these technology-based standards and revise them "as necessary (taking into account developments in practices, processes, and control technologies)" no less frequently than every eight years. CAA section 112(d)(6). In conducting this review, the EPA is not required to recalculate the MACT floor. NRDC v. EPA, 529 F.3d 1077, 1084 (D.C. Cir. 2008). Association of Battery Recyclers, Inc. v. EPA, 716 F.3d 667 (D.C. Cir. 2013).

The second stage in standard-setting focuses on reducing any remaining (i.e., "residual") risk according to CAA section 112(f). CAA section 112(f)(1) required that the EPA prepare a report to Congress discussing (among other things) methods of calculating the risks posed (or potentially posed) by sources after implementation of the MACT standards, the public health significance of those risks and the EPA's recommendations as to legislation regarding such remaining risk. The EPA prepared and submitted the Residual Risk Report to Congress, EPA-453/R-99-001 (Risk Report) in March 1999. CAA section 112(f)(2) then provides that if Congress does not act on any recommendation in the Risk Report, the EPA must analyze and address residual risk for each category or subcategory of sources 8 years after promulgation of such standards pursuant to CAA section 112(d).

CAA section 112(f)(2) of the CAA requires the EPA to determine for source categories subject to MACT standards

whether the emission standards provide an ample margin of safety to protect public health. CAA section 112(f)(2)(B) of the CAA expressly preserves the EPA's use of the two-step process for developing standards to address any residual risk and the agency's interpretation of "ample margin of safety" developed in the National Emissions Standards for Hazardous Air Pollutants: Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants (Benzene NESHAP) (54 FR 38044, September 14, 1989). The EPA notified Congress in the Risk Report that the agency intended to use the Benzene NESHAP approach in making CAA section 112(f) residual risk determinations (EPA-453/R-99-001, p. ES-11). The EPA subsequently adopted this approach in its residual risk determinations and in a challenge to the risk review for the Synthetic Organic Chemical Manufacturing source category, the United States Court of Appeals for the District of Columbia Circuit upheld as reasonable the EPA's interpretation that CAA section 112(f)(2) incorporates the approach established in the Benzene NESHAP. See NRDC v. EPA, 529 F.3d 1077, 1083 (D.C. Cir. 2008) ("[S]ubsection 112(f)(2)(B) expressly incorporates the EPA's interpretation of the Clean Air Act from the Benzene standard, complete with a citation to the Federal Register.");

see also A Legislative History of the Clean Air Act Amendments of 1990, vol. 1, p. 877 (Senate debate on Conference Report).

The first step in the process of evaluating residual risk is the determination of acceptable risk. If risks are unacceptable, the EPA cannot consider cost in identifying the emissions standards necessary to bring risks to an acceptable level. The second step is the determination of whether standards must be further revised in order to provide an ample margin of safety to protect public health. The ample margin of safety is the level at which the standards must be set, unless an even more stringent standard is necessary to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect.

a. Step 1-Determination of Acceptability

The agency in the Benzene NESHAP concluded that "the acceptability of risk under section 112 is best judged on the basis of a broad set of health risk measures and information" and that the "judgment on acceptability cannot be reduced to any single factor." Benzene NESHAP at 38046. The determination of what represents an "acceptable" risk is based on a judgment of "what risks are acceptable in the world in which we live" (Risk Report at 178, quoting NRDC v. EPA, 824 F. 2d 1146, 1165 (D.C. Cir. 1987) (en banc) ("Vinyl Chloride")), recognizing that our world is not risk-free.

In the Benzene NESHAP, we stated that "EPA will generally presume that if the risk to [the maximum exposed] individual is no higher than approximately one in 10 thousand, that risk level is considered acceptable." 54 FR at 38045, September 14, 1989. We discussed the maximum individual lifetime cancer risk (or maximum individual risk (MIR)) as being "the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." Id. We explained that this measure of risk "is an estimate of the upper bound of risk based on conservative assumptions, such as continuous exposure for 24 hours per day for 70 years." Id. We acknowledged that maximum individual lifetime cancer risk "does not necessarily reflect the true risk, but displays a conservative risk level which is an upper-bound that is unlikely to be exceeded." Id.

Understanding that there are both benefits and limitations to using the MIR as a metric for determining acceptability, we acknowledged in the Benzene NESHAP that "consideration of maximum individual risk \* \* \* must take into account the strengths and weaknesses of this measure of risk." Id. Consequently, the presumptive risk level of 100-in-1 million (1-in-10 thousand) provides a benchmark for judging the acceptability of maximum individual lifetime cancer risk, but

does not constitute a rigid line for making that determination.

Further, in the Benzene NESHAP, we noted that:

"[p]articular attention will also be accorded to the weight of evidence presented in the risk assessment of potential carcinogenicity or other health effects of a pollutant. While the same numerical risk may be estimated for an exposure to a pollutant judged to be a known human carcinogen, and to a pollutant considered a possible human carcinogen based on limited animal test data, the same weight cannot be accorded to both estimates. In considering the potential public health effects of the two pollutants, the Agency's judgment on acceptability, including the MIR, will be influenced by the greater weight of evidence for the known human carcinogen."

Id. at 38046. The agency also explained in the Benzene NESHAP that:

"[i]n establishing a presumption for MIR, rather than a rigid line for acceptability, the Agency intends to weigh it with a series of other health measures and factors. These include the overall incidence of cancer or other serious health effects within the exposed population, the numbers of persons exposed within each individual lifetime risk range and associated incidence within, typically, a 50 km exposure radius around facilities, the science policy

assumptions and estimation uncertainties associated with the risk measures, weight of the scientific evidence for human health effects, other quantified or unquantified health effects, effects due to co-location of facilities, and co-emission of pollutants."

Id. at 38045. In some cases, these health measures and factors taken together may provide a more realistic description of the magnitude of risk in the exposed population than that provided by maximum individual lifetime cancer risk alone.

As noted earlier, in NRDC v. EPA, the court held that CAA section 112(f)(2) "incorporates the EPA's interpretation of the Clean Air Act from the Benzene Standard." The court further held that Congress' incorporation of the Benzene standard applies equally to carcinogens and non-carcinogens. 529 F.3d at 1081-82. Accordingly, we also consider non-cancer risk metrics in our determination of risk acceptability and ample margin of safety.

b. Step 2-Determination of Ample Margin of Safety

CAA section 112(f)(2) requires the EPA to determine, for source categories subject to MACT standards, whether those standards provide an ample margin of safety to protect public health. As explained in the Benzene NESHAP, "the second step of the inquiry, determining an 'ample margin of safety,' again includes consideration of all of the health factors, and whether to reduce the risks even further.... Beyond that information,



additional factors relating to the appropriate level of control will also be considered, including costs and economic impacts of controls, technological feasibility, uncertainties and any other relevant factors. Considering all of these factors, the agency will establish the standard at a level that provides an ample margin of safety to protect the public health, as required by section 112." 54 FR at 38046, September 14, 1989.

According to CAA section 112(f)(2)(A), if the MACT standards for HAP "classified as a known, probable, or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million," the EPA must promulgate residual risk standards for the source category (or subcategory), as necessary to provide an ample margin of safety to protect public health. In doing so, the EPA may adopt standards equal to existing MACT standards if the EPA determines that the existing standards (i.e., the MACT standards) are sufficiently protective. NRDC v. EPA, 529 F.3d 1077, 1083 (D.C. Cir. 2008) ("If EPA determines that the existing technology-based standards provide an 'ample margin of safety,' then the Agency is free to readopt those standards during the residual risk rulemaking.") The EPA must also adopt more stringent standards, if necessary, to prevent an adverse

environmental effect,<sup>2</sup> but must consider cost, energy, safety and other relevant factors in doing so.

The CAA does not specifically define the terms "individual most exposed," "acceptable level" and "ample margin of safety." In the Benzene NESHAP, 54 FR at 38044-38045, September 14, 1989, we stated as an overall objective:

In protecting public health with an ample margin of safety under section 112, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1-in-1 million and (2) limiting to no higher than approximately 1-in-10 thousand [i.e., 100-in-1 million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years.

The agency further stated that "[t]he EPA also considers incidence (the number of persons estimated to suffer cancer or other serious health effects as a result of exposure to a pollutant) to be an important measure of the health risk to the exposed population. Incidence measures the extent of health

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<sup>2</sup> "Adverse environmental effect" is defined as any significant and widespread adverse effect, which may be reasonably anticipated to wildlife, aquatic life or natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental qualities over broad areas. CAA section 112(a)(7).

risks to the exposed population as a whole, by providing an estimate of the occurrence of cancer or other serious health effects in the exposed population." Id. at 38045, September 14, 1989.

In the ample margin of safety decision process, the agency again considers all of the health risks and other health information considered in the first step, including the incremental risk reduction associated with standards more stringent than the MACT standard or a more stringent standard that EPA has determined is necessary to ensure risk is acceptable. In the ample margin of safety analysis, the agency considers additional factors, including costs and economic impacts of controls, technological feasibility, uncertainties and any other relevant factors. Considering all of these factors, the agency will establish the standard at a level that provides an ample margin of safety to protect the public health, as required by CAA section 112(f). 54 FR 38046, September 14, 1989.

## 2. NSPS Authority

New source performance standards implement CAA section 111, which requires that each NSPS reflect the degree of emission limitation achievable through the application of the best system of emission reduction (BSER) which (taking into consideration the cost of achieving such emission reductions, any nonair

quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

Existing affected facilities that are modified or reconstructed are also be subject to NSPS. Under CAA section 111(a)(4), ``modification'' means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted. Changes to an existing facility that do not result in an increase in emissions are not considered modifications.

Rebuilt emission units would become subject to the NSPS under the reconstruction provisions in 40 CFR 60.15, regardless of changes in emission rate. Reconstruction means the replacement of components of an existing facility such that: (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and (2) it is technologically and economically feasible to meet the applicable standards (40 CFR 60.15).

Section 111(b)(1)(B) of the CAA requires the EPA to periodically review and, if appropriate, revise the standards of performance as necessary to reflect improvements in methods for reducing emissions. The EPA need not review an NSPS if the

agency determines that such review is not appropriate in light of readily available information on the efficacy of the standard. When conducting the review under CAA section 111(b)(1)(B), the EPA considers both (1) whether developments in technology or other factors support the conclusion that a different system of emissions reduction has become the "best system of emissions reduction" and (2) whether emissions limitations and percent reductions beyond those required by the current standards are achieved in practice.

B. What are the source categories and how do the current NESHAP and NSPS regulate emissions?

1. Description of Phosphoric Acid Manufacturing Source Category

In 2014, 12 facilities in the United States manufacture phosphoric acid. The basic step for producing phosphoric acid is acidulation of phosphate rock. Typically, sulfuric acid, phosphate rock and water are combined together and allowed to react to produce phosphoric acid and gypsum. When phosphate rock is acidulated to manufacture WPPA, fluorine contained in the rock is released. Fluoride (F) compounds, predominately HF, are produced as particulates and gases that are emitted to the atmosphere unless removed from the exhaust stream. Some of these same F compounds also remain in the product acid and are released as air pollutants during subsequent processing of the acid. Gypsum is pumped as a slurry to ponds atop stacks of waste

gypsum where the liquids separate from the slurry and are decanted for return to the process. The gypsum, which is discarded on the stack, is a solid waste stream produced in this process. Five facilities concentrate WPPA to make SPA, typically using the vacuum evaporation process. While one manufacturer is permitted to use a submerged combustion process for the production of SPA, that process was indefinitely shutdown on June 1, 2006. The majority of WPPA is used to produce phosphate fertilizers.

Additional processes may also be used to further refine phosphoric acid. At least two facilities have a defluorination process to remove F from the phosphoric acid product, and one company uses a solvent extraction process to remove metals and organics and to further refine WPPA into purified phosphoric acid (PPA) for use in food manufacturing or specialized chemical processes. In addition, four facilities have processes to remove organics from the acid (i.e., the green acid process).

Sources of HF emissions from phosphoric acid plants include gypsum dewatering stacks, cooling ponds, cooling towers, calciners, reactors, filters, evaporators and other process equipment.

## 2. Federal Emission Standards Applicable to the Phosphoric Acid Manufacturing Source Category

The following federal emission standards are associated with the Phosphoric Acid Manufacturing source category and are subject of this proposed rulemaking:

- National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants (40 CFR part 63, subpart AA);
- Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants (40 CFR part 60, subpart T); and
- Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants (40 CFR part 60, subpart U).

a. Phosphoric Acid Manufacturing NESHAP Emission Regulations

The EPA promulgated 40 CFR part 63, subpart AA for the Phosphoric Acid Manufacturing source category on June 10, 1999 (64 FR 31358). The NESHAP established standards for major sources to control HAP emissions from phosphoric acid facilities. Total F emission limits, as a surrogate for the HAP HF, were set for WPPA process lines and SPA process lines. For new sources, WPPA process lines are limited to 0.0135 pounds (lb) total F per ton (lb total F/ton) of equivalent phosphorus pentoxide ( $P_2O_5$ ), and SPA process lines are limited to 0.00870 lb total F/ton of equivalent  $P_2O_5$ . For existing sources, WPPA process lines are limited to 0.020 lb total F/ton of equivalent  $P_2O_5$ , SPA process lines using a vacuum evaporation process are limited to 0.010 lb total F/ton of equivalent  $P_2O_5$ , and SPA

process lines using a submerged combustion process are limited to 0.020 lb total F/ton of equivalent  $P_2O_5$ .

The NESHAP established emission limits for PM from phosphate rock dryers and phosphate rock calciners as a surrogate for metal HAP. For new sources, phosphate rock dryers are limited to 0.060 pounds PM per ton (lb PM/ton) of phosphate rock feed, and phosphate rock calciners are limited to 0.040 grains of PM per dry standard cubic feet (gr/dscf). For existing sources, phosphate rock dryers are limited to 0.2150 lb PM/ton of phosphate rock feed, and phosphate rock calciners are limited to 0.080 gr/dscf.

Also, the NESHAP established an emission limit for methyl isobutyl ketone (MIBK) for PPA process lines and work practices for cooling towers. For new and existing sources, each product acid stream from PPA process lines is limited to 20 parts per million (ppm) of MIBK, and each raffinate stream from PPA process lines is limited to 30 ppm of MIBK (compliance is based on a 30- day average of daily concentration measurements).

#### b. Phosphoric Acid Manufacturing NSPS Emission Regulations

The EPA promulgated 40 CFR part 60, subpart T for Wet-Process Phosphoric Acid Plants on August 6, 1975 (40 FR 33154). The NSPS established standards to control total F emissions from WPPA plants, including reactors, filters, evaporators and hot



wells. For new, modified, and reconstructed sources WPPA plants are limited to 0.020 lb total F/ton of equivalent  $P_2O_5$ .

The EPA promulgated 40 CFR part 60, subpart U for Superphosphoric Acid Plants on August 6, 1975 (40 FR 33155). The NSPS established standards to control total F emissions from SPA plants, including evaporators, hot wells, acid sumps and cooling tanks. For new, modified and reconstructed sources, SPA plants are limited to 0.010 lb total F/ton of equivalent  $P_2O_5$ .

### 3. Description of Phosphate Fertilizer Production Source

#### Category

In 2014, there are 11 operating facilities that produce phosphate fertilizers, and most facilities can produce either MAP or DAP in the same process train. However, approximately 80 percent of all ammonium phosphates are produced as MAP. MAP and DAP plants are generally collocated with WPPA plants since it is manufactured from phosphoric acid and ammonia. The MAP and DAP manufacturing process consists of three basic steps: Reaction, granulation and finishing operations such as drying, cooling and screening. In addition, some of the fluorine is liberated as HF and silicon tetrafluoride ( $SiF_4$ ), with the majority being emitted as HF. Sources of F emissions from MAP and DAP plants include the reactor, granulator, dryer, cooler, screens and mills.

TSP is made as run-of-the-pile-TSP (ROP-TSP) and granular TSP (GTSP) by reacting WPPA with ground phosphate rock. The

phosphoric acid used in the GTSP process is appreciably lower in concentration (40- percent  $P_2O_5$ ) than that used to manufacture ROP-TSP product (50- to 55- percent  $P_2O_5$ ). The GTSP process yields larger, more uniform particles with improved storage and handling properties than the ROP-TSP process. Currently, no facilities produce ROP-TSP or GTSP,<sup>3</sup> although one facility retains an operating permit to store GTSP.

#### 4. Federal Emission Standards Applicable to the Phosphate Fertilizer Production Source Category

The following federal emission standards are associated with the Phosphate Fertilizer Production source category and are subject of this proposed rulemaking:

- National Emission Standards for Hazardous Air Pollutants from Phosphate Fertilizers Production Plants (40 CFR part 63, subpart BB);
- Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants (40 CFR part 60, subpart V);
- Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants (40 CFR part 60, subpart W); and
- Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities (40 CFR part 60, subpart X).

##### a. Phosphate Fertilizer Production NESHAP Emission Regulations

The EPA promulgated 40 CFR part 63, subpart BB for the Phosphate Fertilizer Production source category on June 10, 1999

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<sup>3</sup> According to 2014 production and trade statistics issued by International Fertilizer Industry Association (IFA).

(64 FR 31358). The NESHAP established standards for major sources to control HAP emissions from phosphate fertilizer facilities. As a surrogate for HF, the NESHAP set total F emission limits for DAP and/or MAP process lines and GTSP process lines and storage buildings. The NESHAP also established work practices for GTSP production. For new sources, DAP and MAP process lines are limited to 0.058 lb total F/ton of equivalent  $P_2O_5$  feed. For existing sources, DAP and MAP process lines are limited to 0.06 lb total F/ton of equivalent  $P_2O_5$  feed. For new sources, GTSP process lines are limited to 0.1230 lb total F/ton of equivalent  $P_2O_5$  feed. For existing sources, GTSP process lines are limited to 0.150 lb total F/ton of equivalent  $P_2O_5$  feed. For new and existing sources, GTSP storage buildings are limited to  $5.0 \times 10^{-4}$  pounds of total F per hour per ton of equivalent  $P_2O_5$  stored.

b. Phosphate Fertilizer Production NSPS Emission Regulations

The EPA promulgated 40 CFR part 60, subpart V for Diammonium Phosphate Plants on July 25, 1977 (42 FR 37938). The NSPS established standards to control total F emissions from granular DAP plants, including reactors, granulators, dryers, coolers, screens and mills. For new, modified and reconstructed sources, granular DAP plants are limited to 0.06 lb total F/ton of equivalent  $P_2O_5$  feed.

The EPA promulgated 40 CFR part 60, subpart W for Triple Superphosphate Plants on July 25, 1977 (42 FR 37938). The NSPS established standards to control total F emissions from the production of ROP-TSP and GTSP, and the storage of ROP-TSP. For new, modified and reconstructed sources, production of ROP-TSP and GTSP and the storage of ROP-TSP is limited to 0.20 lb total F/ton of equivalent  $P_2O_5$  feed.

The EPA promulgated 40 CFR part 60, subpart X for Granular Triple Superphosphate Storage Facilities on July 25, 1977 (42 FR 37938). The NSPS established standards to control total F emissions from the storage of GTSP, including storage or curing buildings (noted as "piles" in subpart X), conveyors, elevators, screens and mills. For new, modified and reconstructed sources, the storage of GTSP is limited to  $5.0 \times 10^{-4}$  pounds of total F per hour per ton of equivalent  $P_2O_5$  stored.

C. What data collection activities were conducted to support this action?

In April 2010, the EPA requested data, pursuant to CAA section 114, from the seven companies that own and operate the 12 Phosphoric Acid facilities and 11 Phosphate Fertilizer facilities. The EPA requested available information regarding process equipment, control devices, point and fugitive emissions, and other aspects of facility operations. The seven companies completed the surveys for their facilities and

submitted the responses to the EPA in the fall of 2010. Additionally, the EPA requested that the facilities conduct emissions tests in 2010 for certain HAP from specific processes. Pollutants tested included HF, total F, PM and HAP metals. The facilities also conducted analyses of the phosphate rock used in the manufacture of phosphoric acid. The facilities submitted the results of these tests to the EPA in the fall of 2010. The test results are available in the docket for this action.

On January 24, 2014, the EPA issued another CAA section 114 survey and testing request to certain facilities in order to gather additional mercury (Hg) and HF emissions data from calciner operations, and additional total F and HF emissions data from certain WPPA, SPA and APF lines. The selection of WPPA, SPA and APF lines to be tested was based on a review of the data received from the April 13, 2010 CAA section 114 survey request. In addition to the testing, the EPA requested process production rate data concurrent with the duration of the emissions testing (e.g., phosphoric acid production in tons per hour of  $P_2O_5$ ).

For more information regarding the April 2010 CAA section 114 and January 2014 CAA section 114 requests, refer to the memorandum, "Information Collection and Additional Data Received for the Phosphoric Acid and Phosphate Fertilizer Production

Source Categories," which is available in the docket for this action.

D. What other relevant background information and data are available?

To support this proposed rulemaking, the EPA used information from the EPA's National Emissions Inventory (NEI), and the RACT/BACT/LAER Clearinghouse (RBLC) when performing the technology review and other analyses. If emissions for a specific emission point were available in the NEI, but test data were not available, we used the NEI data to estimate emissions. This approach was primarily applicable to combustion emissions. The EPA utilized the RBLC as a reference for additional control technologies when performing the technology review. See sections III.C, and IV.D, and V.C of this preamble for further details on the use of these sources of information.

Table 2 of this preamble summarizes the emissions data collected for point sources and fugitive sources at phosphoric acid manufacturing and phosphate fertilizer production facilities of HF, Total PM, Hg and other HAP Metals. This includes emissions data from stack tests, fugitive emission reports, and the NEI.

**Table 2. Summary of Emissions Data Collected for Point Sources and Fugitive Sources at Phosphoric Acid Manufacturing and Phosphate Fertilizer Production Facilities**

Source Category and	HF	Total	Hg	HAP
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<b>Emission Point Type</b>	<b>(tpy)</b>	<b>PM (tpy)</b>	<b>(tpy)</b>	<b>Metals (tpy)<sup>a</sup></b>
<b>Phosphoric Acid Manufacturing</b>				
Point Sources	38	162	0.019	1.07
Fugitive Sources	2,155	0	0	0
Total	2,193	162	0.019	1.07
<b>Phosphate Fertilizer Production</b>				
Point Sources	85.0	907	0.13	0.40
Fugitive Sources	0.0051	0	0	0
Total	85.0	907	0.13	0.40

<sup>a</sup> HAP metals includes: antimony, arsenic, beryllium, cadmium, chromium (VI), chromium III, cobalt, lead, manganese, nickel, and selenium.

### **III. Analytical Procedures**

In this section, we describe the analyses performed to support the proposed decisions for the RTR and other issues addressed in this proposal.

#### A. How did we estimate post-MACT risks posed by the source categories?

The EPA conducted a risk assessment that provides estimates of the MIR posed by the HAP emissions from each source in the source category, the hazard index (HI) for chronic exposures to HAP with the potential to cause non-cancer health effects, and the hazard quotient (HQ) for acute exposures to HAP with the potential to cause non-cancer health effects. The assessment also provides estimates of the distribution of cancer risks within the exposed populations, cancer incidence and an evaluation of the potential for adverse environmental effects. The risk assessment consisted of seven primary steps, as discussed below. The docket for this rulemaking contains the

following document, which provides more information on the risk assessment inputs and models: Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing. The methods used to assess risks (as described in the seven primary steps below) are consistent with those peer-reviewed by a panel of the EPA's Science Advisory Board (SAB) in 2009 and described in their peer review report issued in 2010;<sup>4</sup> they are also consistent with the key recommendations contained in that report.

1. How did we estimate actual emissions and identify the emissions release characteristics?

a. Estimation of Actual Emissions

Data from our April 2010 CAA section 114 request were used for this assessment. The EPA performed a review and thorough quality assurance/quality control (QA/QC) of the data to identify any limitations and issues. The EPA also contacted facility and industry representatives to clarify details and resolve issues with their data submissions.

The EPA updated the 2005 NEI data for the Phosphate Fertilizer Production and Phosphoric Acid Manufacturing source categories with the emissions data and corrections to facility and emission point locations that we received from industry

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<sup>4</sup> U.S. EPA SAB. Risk and Technology Review (RTR) Risk Assessment Methodologies: For Review by the EPA's Science Advisory Board with Case Studies - MACT I Petroleum Refining Sources and Portland Cement Manufacturing, May 2010.



through the CAA section 114 request. The data incorporation procedures are discussed in the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket for this action. In a few limited instances, test data were not available for an emission point available in the NEI, in which case the existing emissions data in the 2005 NEI were used. The following sections of this preamble describe each of the source categories, including a discussion of the applicable information sources used to estimate emissions.

b. Phosphoric Acid Manufacturing

Phosphate rock is the starting material for the production of all phosphate products. Once the rock reaches the phosphoric acid production facility, phosphoric acid is typically produced using the wet method, in which beneficiated ground phosphate rock (i.e., phosphate rock that has been processed to remove impurities) is reacted with sulfuric acid and weak phosphoric acid to produce phosphoric acid and phosphogypsum, a waste product. The phosphogypsum is disposed of on site in waste piles known as gypsum dewatering stacks (which are also referred to as "gypsum stacks" or "gypstacks"). Phosphoric acid facility emissions are both point sources and fugitive sources. Point source emissions originate from equipment (e.g., reactors, filters, evaporators and calciners) associated with phosphoric

acid manufacturing processes including WPPA process lines, SPA process lines and PPA process lines. Fugitive emissions are released from cooling ponds, cooling towers and gypsum dewatering stacks.

In 2014, there are 12 phosphoric acid manufacturing facilities operating in the United States. Based on the emissions dataset (see the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket for this action), all 12 of these facilities are, or show the potential to be, major sources of HAP even though two of these facilities identified themselves as area sources of HAP in their response to our April 2010 CAA section 114 request. Ten of these 12 facilities are collocated with phosphate fertilizer production facilities.

Based on the emissions data provided with the CAA section 114 request or available in the NEI, the total HAP emissions for the Phosphoric Acid Manufacturing source category are approximately 2,230 tpy. HF is the HAP emitted in the largest quantity across these 12 facilities, accounting for approximately 98 percent of the total HAP emissions by mass. Persistent and bioaccumulative HAP (PB-HAP) emissions reported from these facilities include Hg, Pb, dioxin, polycyclic organic matter (POM) and cadmium compounds.

c. Phosphate Fertilizer Production

Phosphate fertilizer operations are generally collocated with phosphoric acid manufacturing facilities, which provide the feedstock (phosphoric acid) for phosphate fertilizer production facilities. Phosphate fertilizer is produced by reacting phosphoric acid and ammonia, followed by granulation, drying, cooling and screening. Emissions from each of these steps are included in the estimated point source emissions for each facility. Phosphate fertilizer facilities also send water to cooling ponds and, thus, contribute to the fugitive emissions from these sources. However, the contribution from phosphate fertilizer production sources to the fugitive emissions from the cooling ponds is minimal. Therefore, we have assigned fugitive emissions from cooling ponds to the Phosphoric Acid Manufacturing source category.

In 2014, there are 11 phosphate fertilizer production facilities operating in the United States. Based on the emissions dataset (see the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket for this action), all 11 of these facilities are, or show the potential to be, major sources of HAP even though one of these facilities identified itself as an area source of HAP in their response to our April 2010 CAA section 114 request. Ten of these

11 facilities are collocated with phosphoric acid manufacturing facilities.

Based on the emissions data provided with the CAA section 114 request or available in the NEI, the total HAP emissions for the Phosphate Fertilizer Production source category are approximately 86 tpy. The HAP emitted in the largest quantity across these 11 facilities is HF. HF accounts for 99 percent of the total emissions by mass. PB-HAP emissions reported from these facilities include Hg, Pb, and cadmium compounds.

## 2. How did we estimate MACT-allowable emissions?

The available emissions data in the RTR emissions dataset include estimates of the mass of HAP emitted during the specified annual time period. In some cases, these "actual" emission levels are lower than the emission levels required to comply with the MACT standards. The emissions level allowed to be emitted by the MACT standards is referred to as the "MACT-allowable" emissions level. We discussed the use of both MACT-allowable and actual emissions in the final Coke Oven Batteries residual risk rule (70 FR 19998-19999, April 15, 2005) and in the proposed and final Hazardous Organic NESHAP residual risk rules (71 FR 34428, June 14, 2006, and 71 FR 76609, December 21, 2006, respectively). In those previous actions, we noted that assessing the risks at the MACT-allowable level is inherently reasonable since these risks reflect the maximum level

facilities could emit and still comply with national emission standards. We also explained that it is reasonable to consider actual emissions, where such data are available, in both steps of the risk analysis, in accordance with the Benzene NESHAP approach. (54 FR 38044, September 14, 1989.) Details on the methodologies for calculating allowable emissions, as discussed below, are provided in the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket for this action.

a. Phosphoric Acid Manufacturing

In the case of this particular source category, point sources contribute only a small percentage of overall emissions. Therefore, as a conservative approach, we used the emission limits and the permitted production capacity specified in the title V permit for each facility to calculate allowable emissions for point sources. Because emission limits are in terms of total F (pounds of total F per ton of  $P_2O_5$  production), and not the HAP HF, emissions for total F were used as a surrogate for HF when calculating allowable emissions. If emissions limits were not available in the title V permit, we used the emission limits for existing sources in the current NESHAP subpart AA. Because emissions limits for metals and MIBK are not listed in the permits, we calculated allowable emissions

using the emissions as measured in the stack tests for the CAA section 114 request, and scaled these emissions up using the permitted capacity. Allowable point source emissions are as much as 59 times higher than actual total F emissions, about 8 times higher than actual metal emissions, and about 2 times higher than actual MIBK emissions at phosphoric acid manufacturing processes.

For fugitive emissions of HF from gypsum dewatering stacks, cooling ponds and cooling towers, the EPA estimated that actual emissions were equivalent to allowable emissions. We do not expect fugitive emissions to increase from these sources with an increase in production rate, or increase significantly during a process upset, as emissions from these large fugitive sources are the cumulative result of many decades of stacking gypsum waste product and re-circulating cooling water. Because of their general homeostatic nature, we expect only minor changes in cooling pond emissions over time. We also anticipate that emissions are higher during daylight hours and warmer months due to the increased evaporation rate associated with higher ambient temperatures. Test data for these sources were obtained during the spring and summer seasons and during daylight hours. Therefore, emissions would not be expected to increase significantly beyond the levels measured during the tests. We expect that the emission factors and range of estimates (high,

medium and low) that we developed, based on the test data for the spring and summer seasons obtained from industry, account sufficiently for any changes to emissions as ambient conditions change. For more information on the development of emission factors, see the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket for this action.

b. Phosphate Fertilizer Production

Similar to phosphoric acid manufacturing, point sources contribute only a small percentage of overall emissions from this particular source category. Therefore, as a conservative approach, we used the emission limits (expressed in pounds of total F per ton of  $P_2O_5$  production) and the permitted production capacity specified in the title V permit for each facility to calculate point source allowable emissions for total F, as a surrogate for HF. If emissions limits were not available in the title V permit, we used the limits for existing sources in the current NESHAP subpart BB. Because emissions limits for metals are not listed in the permits, we calculated allowable emissions using the emissions test data collected by the CAA section 114 request, and scaled these emissions up using the permitted capacity. Allowable point source emissions are as much as 11 times higher than actual total F emissions and about 2 times

higher than actual metal at phosphate fertilizer production processes.

3. How did we conduct dispersion modeling, determine inhalation exposures and estimate individual and population inhalation risks?

Both long-term and short-term inhalation exposure concentrations and health risks from the source category addressed in this proposal were estimated using the Human Exposure Model (Community and Sector HEM-3 version 1.1.0). The HEM-3 performs three primary risk assessment activities: (1) conducting dispersion modeling to estimate the concentrations of HAP in ambient air, (2) estimating long-term and short-term inhalation exposures to individuals residing within 50 kilometers (km) of the modeled sources,<sup>5</sup> and (3) estimating individual and population-level inhalation risks using the exposure estimates and quantitative dose-response information.

The air dispersion model used by the HEM-3 model (AERMOD) is one of the EPA's preferred models for assessing pollutant concentrations from industrial facilities.<sup>6</sup> To perform the dispersion modeling and to develop the preliminary risk estimates, HEM-3 draws on three data libraries. The first is a library of meteorological data, which is used for dispersion

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<sup>5</sup> This metric comes from the Benzene NESHAP. See 54 FR 38046.

<sup>6</sup> U.S. EPA. Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions (70 FR 68218, November 9, 2005).



calculations. This library includes 1 year (2011) of hourly surface and upper air observations for more than 800 meteorological stations, selected to provide coverage of the United States and Puerto Rico. A second library of United States Census Bureau census block<sup>7</sup> internal point locations and populations provides the basis of human exposure calculations (U.S. Census, 2010). In addition, for each census block, the census library includes the elevation and controlling hill height, which are also used in dispersion calculations. A third library of pollutant unit risk factors and other health benchmarks is used to estimate health risks. These risk factors and health benchmarks are the latest values recommended by the EPA for HAP and other toxic air pollutants. These values are available at: <http://www.epa.gov/ttn/atw/toxsource/summary.html> and are discussed in more detail later in this section.

In developing the risk assessment for chronic exposures, we used the estimated annual average ambient air concentrations of each HAP emitted by each source for which we have emissions data in the source category. The air concentrations at each nearby census block centroid were used as a surrogate for the chronic inhalation exposure concentration for all the people who reside in that census block. We calculated the MIR for each facility as the cancer risk associated with a continuous lifetime (24 hours

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<sup>7</sup> A census block is the smallest geographic area for which census statistics are tabulated.

per day, 7 days per week and 52 weeks per year for a 70-year period) exposure to the maximum concentration at the centroid of inhabited census blocks. Individual cancer risks were calculated by multiplying the estimated lifetime exposure to the ambient concentration of each of the HAP (in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )) by its unit risk estimate (URE). The URE is an upper bound estimate of an individual's probability of contracting cancer over a lifetime of exposure to a concentration of 1 microgram of the pollutant per cubic meter of air. For residual risk assessments, we generally use URE values from the EPA's Integrated Risk Information System (IRIS). For carcinogenic pollutants without EPA IRIS values, we look to other reputable sources of cancer dose-response values, often using California EPA (CalEPA) URE values, where available. In cases where new, scientifically credible dose response values have been developed in a manner consistent with the EPA guidelines and have undergone a peer review process similar to that used by the EPA, we may use such dose-response values in place of, or in addition to, other values, if appropriate.

The EPA estimated incremental individual lifetime cancer risks associated with emissions from the facilities in the source category as the sum of the risks for each of the carcinogenic HAP (including those classified as carcinogenic to humans, likely to be carcinogenic to humans, and suggestive

evidence of carcinogenic potential<sup>8</sup>) emitted by the modeled sources. Cancer incidence and the distribution of individual cancer risks for the population within 50 km of the sources were also estimated for the source category as part of this assessment by summing individual risks. A distance of 50 km is consistent with both the analysis supporting the 1989 Benzene NESHAP (54 FR 38044, September 14, 1989) and the limitations of Gaussian dispersion models, including AERMOD.

To assess the risk of non-cancer health effects from chronic exposures, we summed the HQ for each of the HAP that affects a common target organ system to obtain the HI for that target organ system (or target organ-specific HI, TOSHI). The HQ is the estimated exposure divided by the chronic reference value, which is either the EPA reference concentration (RfC) (<http://www.epa.gov/riskassessment/glossary.htm>), defined as "an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a

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<sup>8</sup> These classifications also coincide with the terms "known carcinogen, probable carcinogen, and possible carcinogen," respectively, which are the terms advocated in the EPA's previous Guidelines for Carcinogen Risk Assessment, published in 1986 (51 FR 33992, September 24, 1986). Summing the risks of these individual compounds to obtain the cumulative cancer risks is an approach that was recommended by the EPA's SAB in their 2002 peer review of EPA's National Air Toxics Assessment (NATA) entitled, NATA - Evaluating the National-scale Air Toxics Assessment 1996 Data -- an SAB Advisory, available at: [http://yosemite.epa.gov/sab/sabproduct.nsf/214C6E915BB04E14852570CA007A682C/\\$File/ecadv02001.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/214C6E915BB04E14852570CA007A682C/$File/ecadv02001.pdf).

lifetime," or, in cases where an RfC from the EPA's IRIS database is not available, a value from the following prioritized sources: (1) The Agency for Toxic Substances and Disease Registry Minimum Risk Level (<http://www.atsdr.cdc.gov/mrls/index.asp>), which is defined as "an estimate of daily human exposure to a hazardous substance that is likely to be without an appreciable risk of adverse non-cancer health effects (other than cancer) over a specified duration of exposure"; (2) the CalEPA Chronic Reference Exposure Level (REL) ([http://www.oehha.ca.gov/air/hot\\_spots/pdf/HRAguidefinal.pdf](http://www.oehha.ca.gov/air/hot_spots/pdf/HRAguidefinal.pdf)) , which is defined as "the concentration level (that is expressed in units of micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) for inhalation exposure and in a dose expressed in units of milligram per kilogram-day ( $\text{mg}/\text{kg}\text{-day}$ ) for oral exposures), at or below which no adverse health effects are anticipated for a specified exposure duration"; or (3), as noted above, a scientifically credible dose-response value that has been developed in a manner consistent with the EPA guidelines and has undergone a peer review process similar to that used by the EPA, in place of or in concert with other values.

The EPA also evaluated screening estimates of acute exposures and risks for each of the HAP at the point of highest potential off-site exposure for each facility. To do this, the

EPA estimated the risks when both the peak hourly emissions rate and worst-case dispersion conditions occur. We also assume that a person is located at the point of highest impact during that same time. In accordance with our mandate in section 112 of the CAA, we use the point of highest off-site exposure to assess the potential risk to the maximally exposed individual. The acute HQ is the estimated acute exposure divided by the acute dose-response value. In each case, the EPA calculated acute HQ values using best available, short-term dose-response values. These acute dose-response values, which are described below, include the acute REL, acute exposure guideline levels (AEGL) and emergency response planning guidelines (ERPG) for 1-hour exposure durations. As discussed below, we used conservative assumptions for emissions rates, meteorology and exposure location for our acute analysis.

As described in the CalEPA's Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I, The Determination of Acute Reference Exposure Levels for Airborne Toxicants, an acute REL value (<http://www.oehha.ca.gov/air/pdf/acuterel.pdf>) is defined as "the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration." Id. at page 2. Acute REL values are based on the most sensitive, relevant, adverse health effect reported in the peer-reviewed medical and toxicological literature. Acute REL values are

designed to protect the most sensitive individuals in the population through the inclusion of margins of safety. Because margins of safety are incorporated to address data gaps and uncertainties, exceeding the REL does not automatically indicate an adverse health impact.

AEGL values were derived in response to recommendations from the National Research Council (NRC). As described in Standing Operating Procedures (SOP) of the National Advisory Committee on Acute Exposure Guideline Levels for Hazardous Substances (<http://www.epa.gov/oppt/aegl/pubs/sop.pdf>),<sup>9</sup> "the NRC's previous name for acute exposure levels—community emergency exposure levels—was replaced by the term AEGL to reflect the broad application of these values to planning, response, and prevention in the community, the workplace, transportation, the military, and the remediation of Superfund sites." Id. at 2.

This document also states that AEGL values "represent threshold exposure limits for the general public and are applicable to emergency exposures ranging from 10 minutes to eight hours." Id. at 2. The document lays out the purpose and objectives of AEGL by stating that "the primary purpose of the AEGL program and the National Advisory Committee for Acute

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<sup>9</sup> National Academy of Sciences (NAS), 2001. Standing Operating Procedures for Developing Acute Exposure Levels for Hazardous Chemicals, page 2.

Exposure Guideline Levels for Hazardous Substances is to develop guideline levels for once-in-a-lifetime, short-term exposures to airborne concentrations of acutely toxic, high-priority chemicals." Id. at 21. In detailing the intended application of AEGL values, the document states that "[i]t is anticipated that the AEGL values will be used for regulatory and nonregulatory purposes by U.S. federal and state agencies and possibly the international community in conjunction with chemical emergency response, planning, and prevention programs. More specifically, the AEGL values will be used for conducting various risk assessments to aid in the development of emergency preparedness and prevention plans, as well as real-time emergency response actions, for accidental chemical releases at fixed facilities and from transport carriers." Id. at 31.

The AEGL-1 value is then specifically defined as "the airborne concentration (expressed as ppm (parts per million) or  $\text{mg}/\text{m}^3$  (milligrams per cubic meter)) of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure." Id. at 3. The document also notes that, "Airborne concentrations below AEGL-1 represent exposure levels that can produce mild and progressively increasing but transient

and nondisabling odor, taste, and sensory irritation or certain asymptomatic, nonsensory effects." Id. Similarly, the document defines AEGL-2 values as "the airborne concentration (expressed as parts per million or milligrams per cubic meter) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape." Id.

ERPG values are derived for use in emergency response, as described in the American Industrial Hygiene Association's ERP Committee document titled, ERPGS Procedures and Responsibilities (<http://sp4m.aiha.org/insideaiha/GuidelineDevelopment/ERPG/Documents/ERP-SOPs2006.pdf>), which states that, "Emergency Response Planning Guidelines were developed for emergency planning and are intended as health based guideline concentrations for single exposures to chemicals."<sup>10</sup> Id. at 1. The ERPG-1 value is defined as "the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient adverse health effects or without perceiving a clearly defined, objectionable odor." Id. at 2. Similarly, the ERPG-2 value is defined as "the maximum airborne concentration below which it is

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<sup>10</sup> ERP Committee Procedures and Responsibilities. November 1, 2006. American Industrial Hygiene Association.



believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action." Id. at 1.

As can be seen from the definitions above, the AEGL and ERPG values include the similarly-defined severity levels 1 and 2. For many chemicals, a severity level 1 value AEGL or ERPG has not been developed because the types of effects for these chemicals are not consistent with the AEGL-1/ERPG-1 definitions; in these instances, we compare higher severity level AEGL-2 or ERPG-2 values to our modeled exposure levels to screen for potential acute concerns. When AEGL-1/ERPG-1 values are available, they are used in our acute risk assessments.

Acute REL values for 1-hour exposure durations are typically lower than their corresponding AEGL-1 and ERPG-1 values. Even though their definitions are slightly different, AEGL-1 values are often the same as the corresponding ERPG-1 values, and AEGL-2 values are often equal to ERPG-2 values. Maximum HQ values from our acute screening risk assessments typically result when basing them on the acute REL value for a particular pollutant. In cases where our maximum acute HQ value exceeds 1, we also report the HQ value based on the next highest acute dose-response value (usually the AEGL-1 and/or the ERPG-1 value).

To develop screening estimates of acute exposures in the absence of hourly emissions data, generally we first develop estimates of maximum hourly emissions rates by multiplying the average actual annual hourly emissions rates by a default factor to cover routinely variable emissions. We choose the factor to use partially based on process knowledge and engineering judgment. The factor chosen also reflects a Texas study of short-term emissions variability, which showed that most peak emission events in a heavily-industrialized four-county area (Harris, Galveston, Chambers and Brazoria Counties, Texas) were less than twice the annual average hourly emissions rate. The highest peak emissions event was 74 times the annual average hourly emissions rate, and the 99<sup>th</sup> percentile ratio of peak hourly emissions rate to the annual average hourly emissions rate was 9.<sup>11</sup> Considering this analysis, to account for more than 99 percent of the peak hourly emissions, we apply a conservative screening multiplication factor of 10 to the average annual hourly emissions rate in our acute exposure screening assessments as our default approach. However, we use a factor other than 10 if we have information that indicates that a different factor is appropriate for a particular source category. For this source category, we applied a multiplication factor of 10 to all emission sources except for HF emissions

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<sup>11</sup> See [http://www.tceq.state.tx.us/compliance/field\\_ops/eer/index.html](http://www.tceq.state.tx.us/compliance/field_ops/eer/index.html) or docket to access the source of these data.

from the gypsum dewatering stacks and cooling ponds. The EPA used a multiplication factor of 1 for gypsum dewatering stacks and cooling ponds based upon the stability of HF releases from this emission source. Section III.A.2.a of this preamble as well as the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid Manufacturing and Phosphate Fertilizer Production," which is available in the docket for this rulemaking, discusses our rationale for choosing this factor.

As part of our acute risk assessment process, for cases where acute HQ values from the screening step were less than or equal to 1 (even under the conservative assumptions of the screening analysis), acute impacts were deemed negligible and no further analysis was performed. In cases where an acute HQ from the screening step was greater than 1, additional site-specific data were considered to develop a more refined estimate of the potential for acute impacts of concern. For these source categories, the data refinements employed consisted of, in some cases, the use of a refined emissions multiplier for individual emission process groups to estimate the peak hourly emission rates in lieu of using the default emission multiplier of 10(x) the annual average 1-hour emission rate.

For the two source categories, we conducted a review of the layout of emission points at the facilities to ensure they were located within the facility boundaries as well as to identify

the maximum off-site acute impact receptor for the facilities that did not screen out during the initial base model run.

Ideally, we would prefer to have continuous measurements over time to see how the emissions vary by each hour over an entire year. Having a frequency distribution of hourly emissions rates over a year would allow us to perform a probabilistic analysis to estimate potential threshold exceedances and their frequency of occurrence. Such an evaluation could include a more complete statistical treatment of the key parameters and elements adopted in this screening analysis. Recognizing that this level of data is rarely available, we instead rely on the multiplier approach.

To better characterize the potential health risks associated with estimated acute exposures to HAP, and in response to a key recommendation from the SAB's peer review of the EPA's RTR risk assessment methodologies,<sup>12</sup> we generally examine a wider range of available acute health metrics (e.g., RELs, AEGLs) than we do for our chronic risk assessments. This is in response to the SAB's acknowledgement that there are generally more data gaps and inconsistencies in acute reference values than there are in chronic reference values. In some

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<sup>12</sup> The SAB peer review of RTR Risk Assessment Methodologies is available at: [http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/\\$File/EPA-SAB-10-007-unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf).

cases, when Reference Value Arrays<sup>13</sup> for HAP have been developed, we consider additional acute values (i.e., occupational and international values) to provide a more complete risk characterization.

#### 4. How did we conduct the multipathway exposure and risk screening?

The EPA conducted a screening analysis examining the potential for significant human health risks due to exposures via routes other than inhalation (i.e., ingestion). We first determined whether any sources in the source categories emitted any hazardous air pollutants known to be persistent and bioaccumulative in the environment (PB-HAP). The PB-HAP compounds or compound classes are identified for the screening from the EPA's Air Toxics Risk Assessment Library (available at <http://www2.epa.gov/fera/risk-assessment-and-modeling-air-toxics-risk-assessment-reference-library>).

For the Phosphoric Acid Manufacturing source category, we identified PB-HAP emissions of cadmium compounds, Pb compounds, Hg compounds, POM and dioxin. For the Phosphate Fertilizer Production Source Category, we identified PB-HAP emissions of cadmium compounds, Pb compounds, and Hg compounds.

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<sup>13</sup> U.S. EPA. (2009) Chapter 2.9 Chemical Specific Reference Values for Formaldehyde in Graphical Arrays of Chemical-Specific Health Effect Reference Values for Inhalation Exposures (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/061, and available online at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=211003>.

Because one or more of these PB-HAP are emitted by at least one facility in the two source categories, we proceeded to the next step of the evaluation. In this step, we determined whether the facility-specific emissions rates of the emitted PB-HAP were large enough to create the potential for significant non-inhalation human health risks under reasonable worst-case conditions. To facilitate this step, we developed emissions rate screening levels for several PB-HAP using a hypothetical upper-end screening exposure scenario developed for use in conjunction with the EPA's Total Risk Integrated Methodology. Fate, Transport and Ecological Exposure (TRIM.FaTE) model. The PB-HAP with emissions rate screening levels are: Pb, cadmium, chlorinated dibenzodioxins and furans, Hg compounds and POM. We conducted a sensitivity analysis on the screening scenario to ensure that its key design parameters would represent the upper end of the range of possible values, such that it would represent a conservative but not impossible scenario. The facility-specific emissions rates of each of these PB-HAP were compared to the emission rate screening levels for these PB-HAP to assess the potential for significant human health risks via non-inhalation pathways. We call this application of the TRIM.FaTE model the Tier I TRIM-screen or Tier I screen.

For the purpose of developing emissions rates for our Tier I TRIM-screen, we derived emission levels for these PB-HAP

(other than Pb compounds) at which the maximum excess lifetime cancer risk would be 1-in-1 million (i.e., for polychlorinated dibenzodioxins and furans and POM) or, for HAP that cause non-cancer health effects (i.e., cadmium compounds and Hg compounds), the maximum HQ would be 1. If the emissions rate of any PB-HAP included in the Tier I screen exceeds the Tier I screening emissions rate for any facility, we conduct a second screen, which we call the Tier II TRIM-screen or Tier II screen. In the Tier II screen, the location of each facility that exceeded the Tier I emission rate is used to refine the assumptions associated with the environmental scenario while maintaining the exposure scenario assumptions. We then adjusted the risk-based Tier I screening level for each PB-HAP for each facility based on an understanding of how exposure concentrations estimated for the screening scenario change with meteorology and environmental assumptions. PB-HAP emissions that do not exceed these new Tier II screening levels are considered to pose no unacceptable risks. When facilities exceed the Tier II screening levels, it does not mean that multipathway impacts are significant, only that we cannot rule out that possibility based on the results of the screen. These facilities may be further evaluated for multipathway risks using the TRIM.FaTE model.

In evaluating the potential multi-pathway risk from emissions of Pb compounds, rather than developing a screening emissions rate for them, we compared maximum estimated chronic inhalation exposures with the level of the current NAAQS for Pb.<sup>14</sup> Values below the level of the primary (health based) Pb NAAQS were considered to have a low potential for multi-pathway risk.

For further information on the multipathway analysis approach, see the memorandum, "Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing," which is available in the docket for this action.

5. How did we conduct the environmental risk screening assessment?

a. Adverse Environmental Effect

The EPA has developed a screening approach to examine the potential for adverse environmental effects as required under section 112(f)(2)(A) of the CAA. Section 112(a)(7) of the CAA

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<sup>14</sup> In doing so, the EPA notes that the legal standard for a primary NAAQS - that a standard is requisite to protect public health and provide an adequate margin of safety (CAA section 109(b)) - differs from the CAA section 112(f) standard (requiring among other things that the standard provide an "ample margin of safety"). However, the Pb NAAQS is a reasonable measure of determining risk acceptability (*i.e.*, the first step of the Benzene NESHAP analysis) since it is designed to protect the most susceptible group in the human population - children, including children living near major lead emitting sources (73 FR 67002/3; 73 FR 67000/3; 73 FR 67005/1). In addition, applying the level of the primary Pb NAAQS at the risk acceptability step is conservative, since that primary Pb NAAQS reflects an adequate margin of safety.



defines "adverse environmental effect" as "any significant and widespread adverse effect, which may reasonably be anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas."

b. Environmental HAP

The EPA focuses on seven HAP, which we refer to as "environmental HAP," in its screening analysis: Five PB-HAP and two acid gases. The five PB-HAP are cadmium, dioxins/furans, POM, Hg (both inorganic mercury and methyl mercury) and Pb compounds. The two acid gases are HCl and HF. The rationale for including these seven HAP in the environmental risk screening analysis is presented below.

HAP that persist and bioaccumulate are of particular environmental concern because they accumulate in the soil, sediment and water. The PB-HAP are taken up, through sediment, soil, water, and/or ingestion of other organisms, by plants or animals (e.g., small fish) at the bottom of the food chain. As larger and larger predators consume these organisms, concentrations of the PB-HAP in the animal tissues increases as does the potential for adverse effects. The five PB-HAP we evaluate as part of our screening analysis account for 99.8

percent of all PB-HAP emissions nationally from stationary sources (on a mass basis from the 2005 NEI).

In addition to accounting for almost all of the mass of PB-HAP emitted, we note that the TRIM.FaTE model that we use to evaluate multipathway risk allows us to estimate concentrations of for cadmium compounds, dioxins/furans, POM and Hg in soil, sediment and water. For Pb compounds, we currently do not have the ability to calculate these concentrations using the TRIM.FaTE model. Therefore, to evaluate the potential for adverse environmental effects from Pb compounds, we compare the estimated HEM-modeled exposures from the source category emissions of Pb with the level of the secondary NAAQS for Pb.<sup>15</sup> We consider values below the level of the secondary Pb NAAQS to be unlikely to cause adverse environmental effects.

Due to their well-documented potential to cause direct damage to terrestrial plants, we include two acid gases, HCl and HF, in the environmental screening analysis. According to the 2005 NEI, HCl and HF account for about 99 percent (on a mass basis) of the total acid gas HAP emitted by stationary sources in the U.S. In addition to the potential to cause direct damage to plants, high concentrations of HF in the air have been linked

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<sup>15</sup> The secondary Pb NAAQS is a reasonable measure of determining whether there is an adverse environmental effect since it was established considering "effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being."

to fluorosis in livestock. Air concentrations of these HAP are already calculated as part of the human multipathway exposure and risk screening analysis using the HEM3-AERMOD air dispersion model, and we are able to use the air dispersion modeling results to estimate the potential for an adverse environmental effect.

The EPA acknowledges that other HAP beyond the seven HAP discussed above may have the potential to cause adverse environmental effects. Therefore, the EPA may include other relevant HAP in its environmental risk screening in the future, as modeling science and resources allow. The EPA invites comment on the extent to which other HAP emitted by the source categories may cause adverse environmental effects. Such information should include references to peer-reviewed ecological effects benchmarks that are of sufficient quality for making regulatory decisions, as well as information on the presence of organisms located near facilities within the source category that such benchmarks indicate could be adversely affected.

#### c. Ecological Assessment Endpoints and Benchmarks for PB-HAP

An important consideration in the development of the EPA's screening methodology is the selection of ecological assessment endpoints and benchmarks. Ecological assessment endpoints are defined by the ecological entity (e.g., aquatic communities

including fish and plankton) and its attributes (e.g., frequency of mortality). Ecological assessment endpoints can be established for organisms, populations, communities or assemblages, and ecosystems.

For PB-HAP (other than Pb compounds), we evaluated the following community-level ecological assessment endpoints to screen for organisms directly exposed to HAP in soils, sediment and water:

- Local terrestrial communities (i.e., soil invertebrates, plants) and populations of small birds and mammals that consume soil invertebrates exposed to PB-HAP in the surface soil.
- Local benthic (i.e., bottom sediment dwelling insects, amphipods, isopods and crayfish) communities exposed to PB-HAP in sediment in nearby water bodies.
- Local aquatic (water-column) communities (including fish and plankton) exposed to PB-HAP in nearby surface waters.

For PB-HAP (other than Pb compounds), we also evaluated the following population-level ecological assessment endpoint to screen for indirect HAP exposures of top consumers via the bioaccumulation of HAP in food chains:

- Piscivorous (i.e., fish-eating) wildlife consuming PB-HAP-contaminated fish from nearby water bodies.

For cadmium compounds, dioxins/furans, POM and Hg, we identified the available ecological benchmarks for each assessment endpoint. An ecological benchmark represents a concentration of HAP (e.g., 0.77 ug of HAP per liter of water) that has been linked to a particular environmental effect level

(e.g., a no-observed-adverse-effect level (NOAEL)) through scientific study. For PB-HAP we identified, where possible, ecological benchmarks at the following effect levels:

- Probable effect levels (PEL): Level above which adverse effects are expected to occur frequently.
- Lowest-observed-adverse-effect level (LOAEL): The lowest exposure level tested at which there are biologically significant increases in frequency or severity of adverse effects.
- NOAEL: The highest exposure level tested at which there are no biologically significant increases in the frequency or severity of adverse effect.

We established a hierarchy of preferred benchmark sources to allow selection of benchmarks for each environmental HAP at each ecological assessment endpoint. In general, the EPA sources that are used at a programmatic level (e.g., Office of Water, Superfund Program) were used, if available. If not, the EPA benchmarks used in regional programs (e.g., Superfund) were used. If benchmarks were not available at a programmatic or regional level, we used benchmarks developed by other federal agencies (e.g., National Oceanic and Atmospheric Administration (NOAA) or state agencies.

Benchmarks for all effect levels are not available for all PB-HAP and assessment endpoints. In cases where multiple effect levels were available for a particular PB-HAP and assessment endpoint, we use all of the available effect levels to help us to determine whether ecological risks exist and, if so, whether the risks could be considered significant and widespread.

#### d. Ecological Assessment Endpoints and Benchmarks for Acid Gases

The environmental screening analysis also evaluated potential damage and reduced productivity of plants due to direct exposure to acid gases in the air. For acid gases, we evaluated the following ecological assessment endpoint:

- Local terrestrial plant communities with foliage exposed to acidic gaseous HAP in the air.

The selection of ecological benchmarks for the effects of acid gases on plants followed the same approach as for PB-HAP (i.e., we examine all of the available chronic benchmarks). For HCl, the EPA identified chronic benchmark concentrations. We note that the benchmark for chronic HCl exposure to plants is greater than the reference concentration for chronic inhalation exposure for human health. This means that where the EPA includes regulatory requirements to prevent an exceedance of the reference concentration for human health, additional analyses for adverse environmental effects of HCl would not be necessary.

For HF, the EPA identified chronic benchmark concentrations for plants and evaluated chronic exposures to plants in the screening analysis. High concentrations of HF in the air have also been linked to fluorosis in livestock. However, the HF concentrations at which fluorosis in livestock occur are higher than those at which plant damage begins. Therefore, the

benchmarks for plants are protective of both plants and livestock.

#### e. Screening Methodology

For the environmental risk screening analysis, the EPA first determined whether any facilities in the Phosphoric Acid Manufacturing source category and Phosphate Fertilizer Production source category emitted any of the seven environmental HAP. For the Phosphoric Acid Manufacturing source category, we identified emissions of cadmium, dioxin, Hg, Pb, POM, HCl and HF. For the Phosphate Fertilizer Production source category, we identified emissions of cadmium, Hg, Pb and HF.

Because one or more of the seven environmental HAP evaluated are emitted by at least one facility in the source categories, we proceeded to the second step of the evaluation.

#### f. PB-HAP Methodology

For cadmium, Hg, POM and dioxins/furans, the environmental screening analysis consists of two tiers, while Pb compounds are analyzed differently as discussed earlier. In the first tier, we determined whether the maximum facility-specific emission rates of each of the emitted environmental HAP were large enough to create the potential for adverse environmental effects under reasonable worst-case environmental conditions. These are the same environmental conditions used in the human multipathway exposure and risk screening analysis.

To facilitate this step, TRIM.FaTE was run for each PB-HAP under hypothetical environmental conditions designed to provide conservatively high HAP concentrations. The model was set to maximize runoff from terrestrial parcels into the modeled lake, which in turn, maximized the chemical concentrations in the water, the sediment and the fish. The resulting media concentrations were then used to back-calculate a screening level emission rate that corresponded to the relevant exposure benchmark concentration value for each assessment endpoint. To assess emissions from a facility, the reported emission rate for each PB-HAP was compared to the screening level emission rate for that PB-HAP for each assessment endpoint. If emissions from a facility do not exceed the Tier I screening level, the facility "passes" the screen, and, therefore, is not evaluated further under the screening approach. If emissions from a facility exceed the Tier I screening level, we evaluate the facility further in Tier II.

In Tier II of the environmental screening analysis, the emission rate screening levels are adjusted to account for local meteorology and the actual location of lakes in the vicinity of facilities that did not pass the Tier I screen. The modeling domain for each facility in the Tier II analysis consists of eight octants. Each octant contains 5 modeled soil concentrations at various distances from the facility (5 soil



concentrations x 8 octants = total of 40 soil concentrations per facility) and 1 lake with modeled concentrations for water, sediment and fish tissue. In the Tier II environmental risk screening analysis, the 40 soil concentration points are averaged to obtain an average soil concentration for each facility for each PB-HAP. For the water, sediment and fish tissue concentrations, the highest value for each facility for each pollutant is used. If emission concentrations from a facility do not exceed the Tier II screening level, the facility passes the screen, and is typically not evaluated further. If emissions from a facility exceed the Tier II screening level, the facility does not pass the screen and, therefore, may have the potential to cause adverse environmental effects. Such facilities are evaluated further to investigate factors such as the magnitude and characteristics of the area of exceedance.

#### g. Acid Gas Methodology

The environmental screening analysis evaluates the potential phytotoxicity and reduced productivity of plants due to chronic exposure to acid gases. The environmental risk screening methodology for acid gases is a single-tier screen that compares the average off-site ambient air concentration over the modeling domain to ecological benchmarks for each of the acid gases. Because air concentrations are compared directly to the ecological benchmarks, emission-based screening levels

are not calculated for acid gases as they are in the ecological risk screening methodology for PB-HAPs.

For purposes of ecological risk screening, the EPA identifies a potential for adverse environmental effects to plant communities from exposure to acid gases when the average concentration of the HAP around a facility exceeds the LOAEL ecological benchmark. In such cases, we further investigate factors such as the magnitude and characteristics of the area of exceedance (e.g., land use of exceedance area, size of exceedance area) to determine if there is an adverse environmental effect.

For further information on the environmental screening analysis approach, see the "Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing", which is available in the docket for this action.

#### 6. How did we conduct facility-wide assessments?

To put the source category risks in context, we typically examine the risks from the entire "facility," where the facility includes all HAP-emitting operations within a contiguous area and under common control. In other words, we examine the HAP emissions not only from the source category emission points of interest, but also emissions of HAP from all other emission sources at the facility for which we have data. We examined

"facility-wide" risks using 2005 NEI data and modeling as described in sections IV.B.5 and V.A.5 of this preamble.

We analyzed risks due to the inhalation of HAP that are emitted "facility-wide" for the populations residing within 50 km of each facility, consistent with the methods used for the source category analysis described above. For these facility-wide risk analyses, the modeled source category risks were compared to the facility-wide risks to determine the portion of facility-wide risks that could be attributed to each of the source categories addressed in this proposal. For the facilities in these source categories, we estimated the maximum inhalation cancer and chronic non-cancer risks associated with all HAP emissions sources at the facility, including emissions sources that are not part of the source categories but are located within a contiguous area and are under common control. We specifically examined the facility that was associated with the highest estimate of risk and determined the percentage of that risk attributable to the source category of interest. The results of these facility-wide assessments are summarized in sections IV and V of this preamble. The "Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing" available through the docket for this action provides the methodology and results of the facility-wide

analyses, including all facility-wide risks and the percentage of source category contribution to facility-wide risks.

7. How did we consider uncertainties in risk assessment?

In the Benzene NESHAP, we concluded that risk estimation uncertainty should be considered in our decision-making under the ample margin of safety framework. Uncertainty and the potential for bias are inherent in all risk assessments, including those performed for this proposal. Although uncertainty exists, we believe that our approach, which used conservative tools and assumptions, ensures that our decisions are health protective and environmentally protective. A brief discussion of the uncertainties in the RTR emissions datasets, dispersion modeling, inhalation exposure estimates and dose-response relationships follows below. A more thorough discussion of these uncertainties is included in the Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing, which is available in the docket for this action.

a. Uncertainties in the RTR Emissions Datasets

Although the development of the RTR emissions datasets involved quality assurance/quality control processes, the accuracy of emissions values will vary depending on the source of the data, the degree to which data are incomplete or missing, the degree to which assumptions made to complete the datasets

are accurate, errors in emission estimates and other factors. The emission estimates considered in this analysis generally are annual totals for certain years, and they do not reflect short-term fluctuations during the course of a year or variations from year to year. The estimates of peak hourly emission rates for the acute effects screening assessment were based on an emission adjustment factor applied to the average annual hourly emission rates, which are intended to account for emission fluctuations due to normal facility operations.

b. Uncertainties in Dispersion Modeling

We recognize there is uncertainty in ambient concentration estimates associated with any model, including the EPA's recommended regulatory dispersion model, AERMOD. In using a model to estimate ambient pollutant concentrations, the user chooses certain options to apply. For RTR assessments, we select some model options that have the potential to overestimate ambient air concentrations (e.g., not including plume depletion or pollutant transformation). We select other model options that have the potential to underestimate ambient impacts (e.g., not including building downwash). Other options that we select have the potential to either under- or overestimate ambient levels (e.g., meteorology and receptor locations). On balance, considering the directional nature of the uncertainties commonly present in ambient concentrations estimated by dispersion

models, the approach we apply in the RTR assessments should yield unbiased estimates of ambient HAP concentrations.

### c. Uncertainties in Inhalation Exposure

The EPA did not include the effects of human mobility on exposures in the assessment. Specifically, short-term mobility and long-term mobility between census blocks in the modeling domain were not considered.<sup>16</sup> The approach of not considering short or long-term population mobility does not bias the estimate of the theoretical MIR (by definition), nor does it affect the estimate of cancer incidence because the total population number remains the same. It does, however, affect the shape of the distribution of individual risks across the affected population, shifting it toward higher estimated individual risks at the upper end and reducing the number of people estimated to be at lower risks, thereby increasing the estimated number of people at specific high risk levels (e.g., 1-in-10 thousand or 1-in-1 million).

In addition, the assessment predicted the chronic exposures at the centroid of each populated census block as surrogates for the exposure concentrations for all people living in that block. Using the census block centroid to predict chronic exposures tends to over-predict exposures for people in the census block

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<sup>16</sup> Short-term mobility is movement from one micro-environment to another over the course of hours or days. Long-term mobility is movement from one residence to another over the course of a lifetime.

who live farther from the facility and under-predict exposures for people in the census block who live closer to the facility. Thus, using the census block centroid to predict chronic exposures may lead to a potential understatement or overstatement of the true maximum impact, but is an unbiased estimate of average risk and incidence. We reduce this uncertainty by analyzing large census blocks near facilities using aerial imagery and adjusting the location of the block centroid to better represent the population in the block, as well as adding additional receptor locations where the block population is not well represented by a single location.

The assessment evaluates the cancer inhalation risks associated with pollutant exposures over a 70-year period, which is the assumed lifetime of an individual. In reality, both the length of time that modeled emission sources at facilities actually operate (i.e., more or less than 70 years) and the domestic growth or decline of the modeled industry (i.e., the increase or decrease in the number or size of domestic facilities) will influence the future risks posed by a given source or source category. Depending on the characteristics of the industry, these factors will, in most cases, result in an overestimate both in individual risk levels and in the total estimated number of cancer cases. However, in the unlikely scenario where a facility maintains, or even increases, its

emissions levels over a period of more than 70 years, residents live beyond 70 years at the same location, and the residents spend most of their days at that location, then the cancer inhalation risks could potentially be underestimated. However, annual cancer incidence estimates from exposures to emissions from these sources would not be affected by the length of time an emissions source operates.

The exposure estimates used in these analyses assume chronic exposures to ambient (outdoor) levels of pollutants. Because most people spend the majority of their time indoors, actual exposures may not be as high, depending on the characteristics of the pollutants modeled. For many of the HAP, indoor levels are roughly equivalent to ambient levels, but for very reactive pollutants or larger particles, indoor levels are typically lower. This factor has the potential to result in an overestimate of 25 to 30 percent of exposures.<sup>17</sup>

In addition to the uncertainties highlighted above, there are several factors specific to the acute exposure assessment that the EPA conducts as part of the risk review under section 112 of the CAA that should be highlighted. The accuracy of an acute inhalation exposure assessment depends on the simultaneous occurrence of independent factors that may vary greatly, such as hourly emissions rates, meteorology and the presence of humans

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<sup>17</sup> U.S. EPA. National-Scale Air Toxics Assessment for 1996. (EPA 453/R-01-003; January 2001; page 85.)



at the location of the maximum concentration. In the acute screening assessment that we conduct under the RTR program, we assume that peak emissions from the source category and worst-case meteorological conditions co-occur, thus resulting in maximum ambient concentrations. These two events are unlikely to occur at the same time, making these assumptions conservative. We then include the additional assumption that a person is located at this point during this same time period. For this source category, these assumptions would tend to be worst-case actual exposures as it is unlikely that a person would be located at the point of maximum exposure during the time when peak emissions and worst-case meteorological conditions occur simultaneously.

#### d. Uncertainties in Dose-Response Relationships

There are uncertainties inherent in the development of the dose-response values used in our risk assessments for cancer effects from chronic exposures and non-cancer effects from both chronic and acute exposures. Some uncertainties may be considered quantitatively, and others generally are expressed in qualitative terms. We note as a preface to this discussion a point on dose-response uncertainty that is brought out in the EPA's 2005 Cancer Guidelines;<sup>18</sup> namely, that "the primary goal of EPA actions is protection of human health; accordingly, as an

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<sup>18</sup> Guidelines for Carcinogen Risk Assessment, EPA/630/P-03/001F, March 2005, Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, DC.

Agency policy, risk assessment procedures, including default options that are used in the absence of scientific data to the contrary, should be health protective" (EPA 2005 Cancer Guidelines, pages 1-7). This is the approach followed here as summarized in the next several paragraphs. A complete detailed discussion of uncertainties and variability in dose-response relationships is given in the Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing, which is available in the docket for this action.

Cancer URE values used in our risk assessments are those that have been developed to generally provide an upper bound estimate of risk. That is, they represent a "plausible upper limit to the true value of a quantity" (although this is usually not a true statistical confidence limit).<sup>19</sup> In some circumstances, the true risk could be as low as zero; however, in other circumstances the risk could be greater.<sup>20</sup> When developing an upper bound estimate of risk and to provide risk values that do not underestimate risk, health-protective default approaches are generally used. To err on the side of ensuring adequate health protection, the EPA typically uses the upper bound estimates rather than lower bound or central tendency estimates in our risk assessments, an approach that may have

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<sup>19</sup> Upper bound, IRIS glossary ([http://www.epa.gov/NCEA/iris/help\\_gloss.htm](http://www.epa.gov/NCEA/iris/help_gloss.htm)).

<sup>20</sup> An exception to this is the URE for benzene, which is considered to cover a range of values, each end of which is considered to be equally plausible, and which is based on maximum likelihood estimates.

limitations for other uses (e.g., priority-setting or expected benefits analysis).

Chronic non-cancer RfC and reference dose (RfD) values represent chronic exposure levels that are intended to be health-protective levels. Specifically, these values provide an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure (RfC) or a daily oral exposure (RfD) to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. To derive values that are intended to be "without appreciable risk," the methodology relies upon an uncertainty factor (UF) approach (U.S. EPA, 1993, 1994)<sup>21,22</sup> which considers uncertainty, variability and gaps in the available data. The UF are applied to derive reference values that are intended to protect against appreciable risk of deleterious effects. The UF are commonly default values,<sup>23</sup> e.g.,

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<sup>21</sup> U.S. EPA. Reference Dose (RfD): Description and Use in Health Risk Assessments. Dated March 1993.

<sup>22</sup> U.S. EPA. Methods for Derivation of Inhalation Reference Concentrations and Application of Inhalation Dosimetry. EPA/600/8-90/066F. Dated October 1994.

<sup>23</sup> According to the NRC report, Science and Judgment in Risk Assessment (NRC, 1994) "[Default] options are generic approaches, based on general scientific knowledge and policy judgment, that are applied to various elements of the risk assessment process when the correct scientific model is unknown or uncertain." The 1983 NRC report, Risk Assessment in the Federal Government: Managing the Process, defined default option as "the option chosen on the basis of risk assessment policy that appears to be the best choice in the absence of data to the contrary" (NRC, 1983a, p. 63). Therefore, default options are not rules that bind the agency; rather, the agency may depart from them in evaluating the risks posed by a specific substance when it believes this to be appropriate. In keeping with the EPA's goal of protecting public health and the environment, default assumptions are used to ensure that risk to chemicals is not underestimated (although defaults are not

factors of 10 or 3, used in the absence of compound-specific data; where data are available, UF may also be developed using compound-specific information. When data are limited, more assumptions are needed and more UF are used. Thus, there may be a greater tendency to overestimate risk in the sense that further study might support development of reference values that are higher (i.e., less potent) because fewer default assumptions are needed. However, for some pollutants, it is possible that risks may be underestimated.

While collectively termed "UF," these factors account for a number of different quantitative considerations when using observed animal (usually rodent) or human toxicity data in the development of the RfC. The UF are intended to account for: (1) variation in susceptibility among the members of the human population (i.e., inter-individual variability); (2) uncertainty in extrapolating from experimental animal data to humans (i.e., interspecies differences); (3) uncertainty in extrapolating from data obtained in a study with less-than-lifetime exposure (i.e., extrapolating from sub-chronic to chronic exposure); (4) uncertainty in extrapolating the observed data to obtain an estimate of the exposure associated with no adverse effects; and

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intended to overtly overestimate risk). See EPA, 2004, An Examination of EPA Risk Assessment Principles and Practices, EPA/100/B-04/001 available at: <http://www.epa.gov/osa/pdfs/ratf-final.pdf>.

(5) uncertainty when the database is incomplete or there are problems with the applicability of available studies.

Many of the UF used to account for variability and uncertainty in the development of acute reference values are quite similar to those developed for chronic durations, but they more often use individual UF values that may be less than 10. The UF are applied based on chemical-specific or health effect-specific information (e.g., simple irritation effects do not vary appreciably between human individuals, hence a value of 3 is typically used), or based on the purpose for the reference value (see the following paragraph). The UF applied in acute reference value derivation include: (1) heterogeneity among humans; (2) uncertainty in extrapolating from animals to humans; (3) uncertainty in lowest observed adverse effect (exposure) level to no observed adverse effect (exposure) level adjustments; and (4) uncertainty in accounting for an incomplete database on toxic effects of potential concern. Additional adjustments are often applied to account for uncertainty in extrapolation from observations at one exposure duration (e.g., 4 hours) to derive an acute reference value at another exposure duration (e.g., 1 hour).

Not all acute reference values are developed for the same purpose and care must be taken when interpreting the results of an acute assessment of human health effects relative to the

reference value or values being exceeded. Where relevant to the estimated exposures, the lack of short-term dose-response values at different levels of severity should be factored into the risk characterization as potential uncertainties.

For a group of compounds that are unspeciated (e.g., glycol ethers), we conservatively use the most protective reference value of an individual compound in that group to estimate risk. Similarly, for an individual compound in a group (e.g., ethylene glycol diethyl ether) that does not have a specified reference value, we also apply the most protective reference value from the other compounds in the group to estimate risk.

#### e. Uncertainties in the Multipathway Assessment

For each source category, we generally rely on site-specific levels of PB-HAP emissions to determine whether a refined assessment of the impacts from multipathway exposures is necessary. This determination is based on the results of a two-tiered screening analysis that relies on the outputs from models that estimate environmental pollutant concentrations and human exposures for 4 PB-HAP. Two important types of uncertainty associated with the use of these models in RTR risk assessments and inherent to any assessment that relies on environmental modeling are model uncertainty and input uncertainty.<sup>24</sup>

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<sup>24</sup> In the context of this discussion, the term "uncertainty" as it pertains to exposure and risk encompasses both variability in the range of expected inputs and screening results due to existing spatial, temporal, and other

Model uncertainty concerns whether the selected models are appropriate for the assessment being conducted and whether they adequately represent the actual processes that might occur for that situation. An example of model uncertainty is the question of whether the model adequately describes the movement of a pollutant through the soil. This type of uncertainty is difficult to quantify. However, based on feedback received from previous EPA Science Advisory Board reviews and other reviews, we are confident that the models used in the screen are appropriate and state-of-the-art for the multipathway risk assessments conducted in support of RTR.

Input uncertainty is concerned with how accurately the models have been configured and parameterized for the assessment at hand. For Tier I of the multipathway screen, we configured the models to avoid underestimating exposure and risk. This was accomplished by selecting upper-end values from nationally-representative data sets for the more influential parameters in the environmental model, including selection and spatial configuration of the area of interest, lake location and size, meteorology, surface water and soil characteristics and structure of the aquatic food web. We also assume an ingestion

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factors, as well as uncertainty in being able to accurately estimate the true result.

exposure scenario and values for human exposure factors that represent reasonable maximum exposures.

In Tier II of the multipathway assessment, we refine the model inputs to account for meteorological patterns in the vicinity of the facility versus using upper-end national values and we identify the actual location of lakes near the facility rather than the default lake location that we apply in Tier I. By refining the screening approach in Tier II to account for local geographical and meteorological data, we decrease the likelihood that concentrations in environmental media are overestimated, thereby increasing the usefulness of the screen. The assumptions and the associated uncertainties regarding the selected ingestion exposure scenario are the same for Tier I and Tier II.

For both Tiers I and II of the multipathway assessment, our approach to addressing model input uncertainty is generally cautious. We choose model inputs from the upper end of the range of possible values for the influential parameters used in the models, and we assume that the exposed individual exhibits ingestion behavior that would lead to a high total exposure. This approach reduces the likelihood of not identifying high risks for adverse impacts.

Despite the uncertainties, when individual pollutants or facilities do screen out, we are confident that the potential



for adverse multipathway impacts on human health is very low. On the other hand, when individual pollutants or facilities do not screen out, it does not mean that multipathway impacts are significant, only that we cannot rule out that possibility and that a refined multipathway analysis for the site might be necessary to obtain a more accurate risk characterization for the source category.

For further information on uncertainties and the Tier I and 2 screening methods, refer to the risk document, Appendix 5, "Technical Support Document for TRIM-Based Multipathway Tiered Screening Methodology for RTR."

#### f. Uncertainties in the Environmental Risk Screening Assessment

For each source category, we generally rely on site-specific levels of environmental HAP emissions to perform an environmental screening assessment. The environmental screening assessment is based on the outputs from models that estimate environmental HAP concentrations. The same models, specifically the TRIM.FaTE multipathway model and the AERMOD air dispersion model, are used to estimate environmental HAP concentrations for both the human multipathway screening analysis and for the environmental screening analysis. Therefore, both screening assessments have similar modeling uncertainties.

Two important types of uncertainty associated with the use of these models in RTR environmental screening assessments—and

inherent to any assessment that relies on environmental modeling—are model uncertainty and input uncertainty.<sup>25</sup>

Model uncertainty concerns whether the selected models are appropriate for the assessment being conducted and whether they adequately represent the movement and accumulation of environmental HAP emissions in the environment. For example, does the model adequately describe the movement of a pollutant through the soil? This type of uncertainty is difficult to quantify. However, based on feedback received from previous EPA SAB reviews and other reviews, we are confident that the models used in the screen are appropriate and state-of-the-art for the environmental risk assessments conducted in support of our RTR analyses.

Input uncertainty is concerned with how accurately the models have been configured and parameterized for the assessment at hand. For Tier I of the environmental screen for PB-HAP, we configured the models to avoid underestimating exposure and risk to reduce the likelihood that the results indicate the risks are lower than they actually are. This was accomplished by selecting upper-end values from nationally-representative data sets for the more influential parameters in the environmental model,

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<sup>25</sup> In the context of this discussion, the term “uncertainty,” as it pertains to exposure and risk assessment, encompasses both variability in the range of expected inputs and screening results due to existing spatial, temporal, and other factors, as well as uncertainty in being able to accurately estimate the true result.

including selection and spatial configuration of the area of interest, the location and size of any bodies of water, meteorology, surface water and soil characteristics and structure of the aquatic food web. In Tier I, we used the maximum facility-specific emissions for the PB-HAP (other than Pb compounds, which were evaluated by comparison to the secondary Pb NAAQS) that were included in the environmental screening assessment and each of the media when comparing to ecological benchmarks. This is consistent with the conservative design of Tier I of the screen. In Tier II of the environmental screening analysis for PB-HAP, we refine the model inputs to account for meteorological patterns in the vicinity of the facility versus using upper-end national values, and we identify the locations of water bodies near the facility location. By refining the screening approach in Tier II to account for local geographical and meteorological data, we decrease the likelihood that concentrations in environmental media are overestimated, thereby increasing the usefulness of the screen. To better represent widespread impacts, the modeled soil concentrations are averaged in Tier II to obtain one average soil concentration value for each facility and for each PB-HAP. For PB-HAP concentrations in water, sediment and fish tissue, the highest value for each facility for each pollutant is used.

For the environmental screening assessment for acid gases, we employ a single-tiered approach. We use the modeled air concentrations and compare those with ecological benchmarks.

For both Tiers I and II of the environmental screening assessment, our approach to addressing model input uncertainty is generally cautious. We choose model inputs from the upper end of the range of possible values for the influential parameters used in the models, and we assume that the exposed individual exhibits ingestion behavior that would lead to a high total exposure. This approach reduces the likelihood of not identifying potential risks for adverse environmental impacts.

Uncertainty also exists in the ecological benchmarks for the environmental risk screening analysis. We established a hierarchy of preferred benchmark sources to allow selection of benchmarks for each environmental HAP at each ecological assessment endpoint. In general, EPA benchmarks used at a programmatic level (e.g., Office of Water, Superfund Program) were used if available. If not, we used EPA benchmarks used in regional programs (e.g., Superfund Program). If benchmarks were not available at a programmatic or regional level, we used benchmarks developed by other agencies (e.g., NOAA) or by state agencies.

In all cases (except for Pb compounds, which were evaluated through a comparison to the NAAQS), we searched for benchmarks

at the following three effect levels, as described in section III.A.5 of this preamble:

1. A no-effect level (i.e., NOAEL).
2. Threshold-effect level (i.e., LOAEL).
3. Probable effect level (i.e., PEL).

For some ecological assessment endpoint/environmental HAP combinations, we could identify benchmarks for all three effect levels, but for most, we could not. In one case, where different agencies derived significantly different numbers to represent a threshold for effect, we included both. In several cases, only a single benchmark was available. In cases where multiple effect levels were available for a particular PB-HAP and assessment endpoint, we used all of the available effect levels to help us to determine whether risk exists and if the risks could be considered significant and widespread.

The EPA evaluates the following seven HAP in the environmental risk screening assessment: cadmium, dioxins/furans, POM, Hg (both inorganic Hg and methyl Hg), Pb compounds, HCl and HF, where applicable. These seven HAP represent pollutants that can cause adverse impacts for plants and animals either through direct exposure to HAP in the air or through exposure to HAP that is deposited from the air onto soils and surface waters. These seven HAP also represent those HAP for which we can conduct a meaningful environmental risk

screening assessment. For other HAP not included in our screening assessment, the model has not been parameterized such that it can be used for that purpose. In some cases, depending on the HAP, we may not have appropriate multipathway models that allow us to predict the concentration of that pollutant. The EPA acknowledges that other HAP beyond the seven HAP that we are evaluating may have the potential to cause adverse environmental effects and, therefore, the EPA may evaluate other relevant HAP in the future, as modeling science and resources allow.

Further information on uncertainties and the Tier I and II environmental screening methods, is provided in Appendix 5 of the document, "Technical Support Document for TRIM-Based Multipathway Tiered Screening Methodology for RTR: Summary of Approach and Evaluation." Also, see the memorandum, "Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing," which is available in the docket for this action.

B. How did we consider the risk results in making decisions for this proposal?

As discussed in section II.A of this preamble, in evaluating and developing standards under CAA section 112(f)(2), we apply a two-step process to address residual risk. In the first step, the EPA determines whether risks are acceptable. This determination "considers all health information, including

risk estimation uncertainty, and includes a presumptive limit on maximum individual lifetime [cancer] risk (MIR)<sup>26</sup> of approximately [1-in-10 thousand] [i.e., 100-in-1 million]." 54 FR 38045, September 14, 1989. If risks are unacceptable, the EPA must determine the emissions standards necessary to bring risks to an acceptable level without considering costs. In the second step of the process, the EPA considers whether the emissions standards provide an ample margin of safety "in consideration of all health information, including the number of persons at risk levels higher than approximately 1-in-1 million, as well as other relevant factors, including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision." Id. The EPA must promulgate emission standards necessary to provide an ample margin of safety. After conducting the ample margin of safety analysis, we consider whether a more stringent standard is necessary to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect.

In past residual risk actions, the EPA considered a number of human health risk metrics associated with emissions from the categories under review, including the MIR, the number of persons in various risk ranges, cancer incidence, the maximum

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<sup>26</sup> Although defined as "maximum individual risk," MIR refers only to cancer risk. MIR, one metric for assessing cancer risk, is the estimated risk where an individual exposed to the maximum level of a pollutant for a lifetime.

non-cancer HI and the maximum acute non-cancer hazard. See, e.g., 72 FR 25138, May 3, 2007; 71 FR 42724, July 27, 2006. The EPA considered this health information for both actual and allowable emissions. See, e.g., 75 FR 65068, October 21, 2010; 75 FR 80220, December 21, 2010; 76 FR 29032, May 19, 2011. The EPA also discussed risk estimation uncertainties and considered the uncertainties in the determination of acceptable risk and ample margin of safety in these past actions. The EPA considered this same type of information in support of this action.

The agency is considering these various measures of health information to inform our determinations of risk acceptability and ample margin of safety under CAA section 112(f). As explained in the Benzene NESHAP, "the first step judgment on acceptability cannot be reduced to any single factor" and, thus, "[t]he Administrator believes that the acceptability of risk under [previous] section 112 is best judged on the basis of a broad set of health risk measures and information." 54 FR 38046, September 14, 1989. Similarly, with regard to the ample margin of safety determination, "the Agency again considers all of the health risk and other health information considered in the first step. Beyond that information, additional factors relating to the appropriate level of control will also be considered, including cost and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors." Id.



The Benzene NESHAP approach provides flexibility regarding factors the EPA may consider in making determinations and how the EPA may weigh those factors for each source category. In responding to comment on our policy under the Benzene NESHAP, the EPA explained that:

"[t]he policy chosen by the Administrator permits consideration of multiple measures of health risk. Not only can the MIR figure be considered, but also incidence, the presence of non-cancer health effects, and the uncertainties of the risk estimates. In this way, the effect on the most exposed individuals can be reviewed as well as the impact on the general public. These factors can then be weighed in each individual case. This approach complies with the *Vinyl Chloride* mandate that the Administrator ascertain an acceptable level of risk to the public by employing [her] expertise to assess available data. It also complies with the Congressional intent behind the CAA, which did not exclude the use of any particular measure of public health risk from the EPA's consideration with respect to CAA section 112 regulations, and thereby implicitly permits consideration of any and all measures of health risk which the Administrator, in [her] judgment, believes are appropriate to determining what will 'protect the public health'."

See 54 FR at 38057, September 14, 1989. Thus, the level of the MIR is only one factor to be weighed in determining acceptability of risks. The Benzene NESHAP explained that "an MIR of approximately one in 10 thousand should ordinarily be the upper end of the range of acceptability. As risks increase above this benchmark, they become presumptively less acceptable under CAA section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability. Or, the Agency may find, in a particular case, that a risk that includes MIR less than the presumptively acceptable level is unacceptable in the light of other health risk factors." Id. at 38045. Similarly, with regard to the ample margin of safety analysis, the EPA stated in the Benzene NESHAP that: "EPA believes the relative weight of the many factors that can be considered in selecting an ample margin of safety can only be determined for each specific source category. This occurs mainly because technological and economic factors (along with the health-related factors) vary from source category to source category." Id. at 38061. We also consider the uncertainties associated with the various risk analyses, as discussed earlier in this preamble, in our determinations of acceptability and ample margin of safety.

The EPA notes that it has not considered certain health information to date in making residual risk determinations. At

this time, we do not attempt to quantify those HAP risks that may be associated with emissions from other facilities that do not include the source categories in question, mobile source emissions, natural source emissions, persistent environmental pollution or atmospheric transformation in the vicinity of the sources in these categories.

The agency understands the potential importance of considering an individual's total exposure to HAP in addition to considering exposure to HAP emissions from the source category and facility. We recognize that such consideration may be particularly important when assessing non-cancer risks, where pollutant-specific exposure health reference levels (e.g., RfCs) are based on the assumption that thresholds exist for adverse health effects. For example, the agency recognizes that, although exposures attributable to emissions from a source category or facility alone may not indicate the potential for increased risk of adverse non-cancer health effects in a population, the exposures resulting from emissions from the facility in combination with emissions from all of the other sources (e.g., other facilities) to which an individual is exposed may be sufficient to result in increased risk of adverse non-cancer health effects. In May 2010, the SAB advised the EPA "that RTR assessments will be most useful to decision makers and communities if results are presented in the broader context of

aggregate and cumulative risks, including background concentrations and contributions from other sources in the area."<sup>27</sup>

In response to the SAB recommendations, the EPA is incorporating cumulative risk analyses into its RTR risk assessments, including those reflected in this proposal. The agency is: (1) conducting facility-wide assessments, which include source category emission points as well as other emission points within the facilities; (2) considering sources in the same category whose emissions result in exposures to the same individuals; and (3) for some persistent and bioaccumulative pollutants, analyzing the ingestion route of exposure. In addition, the RTR risk assessments have always considered aggregate cancer risk from all carcinogens and aggregate non-cancer HI from all non-carcinogens affecting the same target organ system.

Although we are interested in placing source category and facility-wide HAP risks in the context of total HAP risks from all sources combined in the vicinity of each source, we are concerned about the uncertainties of doing so. Because of the contribution to total HAP risk from emission sources other than

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<sup>27</sup> EPA's responses to this and all other key recommendations of the SAB's advisory on RTR risk assessment methodologies (which is available at: [http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/\\$File/EPA-SAB-10-007-unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf)) are outlined in a memorandum to this rulemaking docket from David Guinnup titled, EPA's Actions in Response to the Key Recommendations of the SAB Review of RTR Risk Assessment Methodologies.

those that we have studied in depth during this RTR review such estimates of total HAP risks would have significantly greater associated uncertainties than the source category or facility-wide estimates. Such aggregate or cumulative assessments would compound those uncertainties, making the assessments too unreliable.

C. How did we perform the technology reviews for the NESHAP and NSPS?

Our technology review focused on the identification and evaluation of developments in practices, processes and control technologies that have occurred since the NESHAP standards were promulgated. We also focused on the emission limitations and percent reductions achieved in practice that have occurred since the NSPS standards were promulgated. Where we identified such developments, in order to inform our decision of whether it is "necessary" to revise the emissions standards, we analyzed the technical feasibility of applying these developments and the estimated costs, energy implications, non-air environmental impacts, as well as considering the emission reductions. For the NESHAP, we also considered the appropriateness of applying controls to new sources versus retrofitting existing sources.

Based on our analyses of the available data and information, we identified potential developments in practices,

processes and control technologies. For this exercise, we considered any of the following to be a "development":

- Any add-on control technology or other equipment that was not identified and considered during development of the original NESHAP and NSPS.
- Any improvements in add-on control technology or other equipment (that were identified and considered during development of the original NESHAP and NSPS) that could result in additional emissions reduction.
- Any work practice or operational procedure that was not identified or considered during development of the original NESHAP and NSPS.
- Any process change or pollution prevention alternative that could be broadly applied to the industry and that was not identified or considered during development of the original NESHAP and NSPS.
- Any significant changes in the cost (including cost effectiveness) of applying controls (including controls the EPA considered during the development of the original NESHAP and NSPS).

In addition to reviewing the practices, processes or control technologies that were considered at the time we developed the 1999 Phosphoric Acid Manufacturing and Phosphate Fertilizer Production NESHAP (i.e., NESHAP subpart AA and NESHAP subpart BB), we reviewed a variety of data sources in our investigation of potential practices, processes or controls to consider. Among the data sources we reviewed were the NESHAP for various industries that were promulgated since the NESHAP and NSPS standards being reviewed in this action. We reviewed the regulatory requirements and/or technical analyses associated with these regulatory actions to identify any practices, processes and control technologies considered in these efforts

that could be applied to emission sources in the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production source categories as well as the costs, non-air impacts and energy implications associated with the use of these technologies.

We also consulted the EPA's RBLC to identify potential technology advances. Control technologies, classified as Reasonably Available Control Technology (RACT), Best Available Control Technology (BACT), or Lowest Achievable Emissions Rate (LAER) apply to stationary sources depending on whether the sources are existing or new, and depending on the size, age and location of the facility. BACT and LAER (and sometimes RACT) are determined on a case-by-case basis, usually by state or local permitting agencies. The EPA established the RBLC to provide a central database of air pollution technology information (including technologies required in source-specific permits) to promote the sharing of information among permitting agencies and to aid in identifying future possible control technology options that might apply broadly to numerous sources within a category or apply only on a source-by-source basis. The RBLC contains over 5,000 air pollution control permit determinations that can help identify appropriate technologies to mitigate many air pollutant emission streams. We searched this database to determine whether it contained any practices, processes or control technologies that are applicable to the types of

processes covered by the phosphoric acid and phosphate fertilizer NESHAP and NSPS.

Additionally, we requested information from facilities regarding developments in practices, processes or control technology. Finally, we reviewed information from other sources, such as state and/or local permitting agency databases and industry-supported databases.

#### **IV. Analytical Results and Proposed Decisions for the Phosphoric Acid Manufacturing Source Category**

A. What actions are we taking pursuant to CAA sections 112(d)(2) and 112(d)(3) for the Phosphoric Acid Manufacturing source category?

##### 1. MACT and Work Practice Standards for Phosphate Rock Dryers and Calciners

We are proposing MACT standards pursuant to CAA section 112(d)(2) and (d)(3), and work practice standards pursuant to CAA section 112(h), for phosphate rock calciners, an emissions source that was regulated under the initial MACT standard for PM only, and adding pollutants, Hg and HF, that were not regulated under the initial NESHAP subpart AA. Under CAA section 112(d)(3), the EPA is required to promulgate emissions limits for all HAP emitted from major source categories (see National Lime v. EPA, 233 F. 3d 625, 634 (D.C. Cir. 2000); see also Sierra Club v. EPA, 479 F. 3d 875, 878 and 883 (D.C. Cir. 2007)



(finding that the EPA must set standards for HAP even if they are not currently controlled with technology and that the agency may not set "no emissions reductions" MACT floors).

The United States Court of Appeals for the District of Columbia Circuit has also held that the EPA may permissibly amend improper MACT determinations, including amendments to improperly promulgated floor determinations, using its authority under CAA section 112(d)(2) and (3). Medical Waste Institute v. EPA, 645 F. 3d 420, 425-27 (D.C. Cir. 2011). National Lime, 233 F. 3d at 633-34; see also Medical Waste Incinerator 645 F. 3d at 426 (resetting MACT floor, based on post-compliance data, permissible when originally-established floor was improperly established, and permissibility of the EPA's action does not turn on whether the prior standard was remanded or vacated); Portland Cement Ass'n v. EPA, 665 F.3d 177 at 189 (the EPA may reassess its standards including revising existing floors).

Phosphate rock dryers are no longer used in the manufacture of phosphoric acid or phosphate fertilizers. Rock dryers were previously used in the industry in the manufacture of GTSP. Because there are no longer any U.S. producers of GTSP, the rock dryers that were previously used in this industry are no longer in operation. In response to our April 2010 CAA section 114 request, we received emissions data for one dryer that is currently used in the production of defluorinated phosphate

rock, which is subsequently used in the production of animal feed products. Because this process is not part of the regulated source categories, Phosphoric Acid or Phosphate Fertilizer NESHAP, these data were not used to set emissions limits and the EPA is not proposing revised emissions limits for rock dryers.

a. Determination of Emission Standards for Mercury from Phosphate Rock Calciners

The 1999 Phosphoric Acid Manufacturing NESHAP (i.e., NESHAP subpart AA) specified emissions limits for metal HAP (e.g., arsenic, cadmium, Pb, Hg) from phosphate rock dryers and phosphate rock calciners in terms of a PM emissions limit (i.e., PM is used as a surrogate for all metal HAP). However, in this source category, PM is an improper surrogate for Hg. Therefore, we are eliminating the use of PM as a surrogate for Hg and proposing a Hg emission limit for phosphate rock calciners. Based on information provided by industry, rock dryers are no longer used in the production of phosphoric acid and their future use is not anticipated, so there are no emissions from rock dryers for this source category. Therefore, we are not proposing a Hg emission limit for rock dryers. We are retaining the PM standard as a surrogate for other HAP metal emissions from phosphate rock calciners.

In general, MACT floor analyses involve an assessment of the emissions from the best-performing sources in a source

category using the available emissions information. For each source category, the assessment involves a review of emissions data with an appropriate accounting for emissions variability. Various methods of estimating emissions can be used if the methods can be shown to provide reasonable estimates of the actual emissions performance of a source or sources.

The MACT standards for existing sources must be at least as stringent as the average emissions limitation achieved by the best-performing 12 percent of existing sources (for which the Administrator has emissions information) or the best-performing five sources for source categories or subcategories with fewer than 30 sources (CAA section 112(d)(3)(A) and (d)(3)(B)). For new sources, MACT standards must be at least as stringent as the control level achieved in practice by the best-controlled similar source (CAA section 112(d)(3)). The EPA must also consider more stringent "beyond-the-floor" control options. When considering beyond-the-floor options, the EPA must consider not only the maximum degree of reduction in emissions of HAP, but must take into account costs, energy, and non-air quality health and environmental impacts.

In 2014, only one facility operates phosphate rock calciners. In response to the April 2010 CAA section 114 request, the facility provided Hg emissions testing results for one of their six calciners to the EPA. In addition, the facility

provided Hg emissions testing results for another, previously untested calciner in response to the January 2014 CAA section 114 request. As a result, the EPA had two datasets (at one facility) on which to base the MACT floors for Hg for new and existing phosphate rock calciners. However, calciner Hg emissions are the result of Hg contained in the fuel and raw materials. Because the six calciners are designed to be identical and use the same raw materials and fuels, Hg emissions from the six calciners are expected to be identical. This determination is consistent with the June 13, 2002, amendments to the NESHAP subpart AA (67 FR 40814) when the EPA could not find any reason to believe that the six calciners are not identical in regards to particulate emissions. In the preamble to the 2002 amendments, we concluded that factors other than the MACT technology (e.g., the source of the rock input, operator training experience) do not affect emission levels and that the calciners were designed to be identical. For this reason, all the data from the calciners were combined into one dataset to determine both new and existing MACT floors.

To determine the MACT floors for phosphate rock calciners, we used the arithmetic average of all the available emissions data from the 2010 and 2014 data requests and accounted for emissions variability. We accounted for emissions variability in setting floors not only because variability is an aspect of

performance, but because it is reasonable to assess performance over time and to account for test method variability. The United States Court of Appeals for the District of Columbia Circuit has recognized that the EPA may consider variability in estimating the degree of emission reduction achieved by best-performing sources, and in setting MACT floors (see Mossville Environmental Action Now v. EPA, 370 F.3d 1232, 1241-42 (D.C. Cir. 2004)).

To account for variability in the operation and emissions, we used the stack test data to calculate the average emissions and the 99- percent upper prediction limit (UPL) to derive the MACT floor limit. For more information regarding the general use of the UPL and why it is appropriate for calculating MACT floors, see the memorandum, "Use of the Upper Prediction Limit for Calculating MACT Floors," which is available in the docket for this action. Table 3 of this preamble provides the results of the MACT floor calculations (considering variability) for Hg.

**Table 3. Results of the MACT Floor Calculations for Mercury from Phosphate Rock Calciners at Phosphoric Acid Facilities**

Pollutant	Results	Units
Hg	0.14 <sup>a</sup>	mg/dscm @ 3%O <sub>2</sub>

<sup>a</sup> The EPA is proposing beyond-the-floor emission standards for Hg from phosphate rock calciners; therefore, the results of the MACT floor variability calculations do not reflect the proposed emission standards for Hg from phosphate rock calciners. Please refer to Table 4 of this preamble for the proposed emission limits for Hg.

Additional details regarding the MACT floor analysis and UPL calculations, including a description of how we assessed the limited dataset that was used to calculate the MACT floor value,

are contained in the memorandum, "Maximum Achievable Control Technology (MACT) Floor Analysis for the Phosphate Rock Calciners at Phosphoric Acid Manufacturing Plants," which is available in the docket for this action. Additional detail on the EPA's approach for applying the UPL methodology to limited datasets is provided in the memorandum, "Approach for Applying the Upper Prediction Limit to Limited Datasets," which is available in the docket for this action.

Once the MACT floor determinations were completed, we considered various regulatory options more stringent than the MACT floor levels of control (e.g., control technologies or work practices that could result in lower emissions). The memorandum, "Beyond-the-Floor Analysis for Phosphate Rock Calciners at Phosphoric Acid Manufacturing Plants," which is available in the docket for this action, contains a detailed description of the beyond-the-floor consideration. We first identified regulatory requirements for phosphate rock calciners that would be more stringent than the MACT floor level of control and determined whether the requirements were technically feasible. If the more stringent requirements were technically feasible, we conducted an analysis of the cost and emission impacts associated with implementing the requirements.

We analyzed a beyond-the-floor option of requiring existing phosphate rock calciners to meet a Hg emission limit of 0.014

milligrams per dry standard cubic meter (mg/dscm) on a 3-percent oxygen basis. This reflects the expected emission reductions that can be achieved using the available control technologies. Specifically, we analyzed the costs and emission reductions of two types of control technologies: installation of a fixed-bed carbon adsorption system, and installation of activated carbon injection (ACI) (followed by either the existing wet electrostatic precipitators (WESP) or a newly installed fabric filter system). Both the fixed-bed and ACI systems are estimated to reduce emissions of Hg by 90 percent from the baseline emissions (for further detail see the memorandum, "Beyond-the-Floor Analysis for the Phosphate Rock Calciners at Phosphoric Acid Manufacturing Plants," which is available in the docket for this action). We chose to evaluate an ACI system (installed after the existing WESP) followed by a fabric filter, in addition to an ACI system followed by the existing WESP, due to the relatively high moisture content of the calciner exhaust streams. ACI followed by a fabric filter is the most common control system installed for control of Hg, but in this case, the high moisture content may have a tendency to blind a fabric filter.

We also evaluated fixed-bed carbon adsorption systems as potential control technology for achieving beyond-the-floor emission reductions. For a fixed-bed carbon adsorption system,

we estimate that applying additional control to reduce Hg emissions from phosphate rock calciners would result in an annualized cost of approximately \$1.2 million, and would achieve Hg reductions of 145 pounds of Hg per year. The cost effectiveness of installing a fixed-bed carbon adsorber was estimated to be \$8,000 dollars per pound of Hg reduced, which we considered to be cost effective. This cost-effectiveness for Hg is comparable to or less than values the EPA found to be cost effective for removal of Hg in other air toxics rules. For example, in the National Emission Standards for Hazardous Air Pollutants: Mercury Emissions from Mercury Cell Chlor-Alkali Plants, the cost effectiveness was found to be between \$13,000 to \$31,000 per pound of Hg emissions reduced for the individual facilities (see Supplemental proposed rule, 76 FR 13858 (March 14, 2011)).

For an ACI system, we estimate that applying additional control to reduce Hg emissions from phosphate rock calciners would result in an annualized cost of approximately \$1.8 million to \$2.5 million (using a WESP or a fabric filter system, respectively), and would achieve Hg reductions of 145 pounds of Hg per year. The cost effectiveness of installing an ACI system was estimated to be between \$12,000 and \$17,000 dollars per pound of Hg reduced (using a WESP or a fabric filter system, respectively), which we considered to be cost effective on the



basis previously stated. Consequently, we are proposing that existing phosphate rock calciners meet a Hg emission limit of 0.014 mg/dscm on a 3-percent oxygen basis as a beyond-the-floor standard. We are also proposing that phosphate rock calciners at new sources meet a beyond-the-floor Hg emission limit of 0.014 mg/dscm on a 3-percent oxygen basis. Table 4 of this preamble lists the proposed Hg emission limits for phosphate rock calciners. We are unaware of any technologies that could further reduce Hg emissions from streams that have high moisture content. The memorandum, "Beyond-the-Floor Analysis for the Phosphate Rock Calciners at Phosphoric Acid Manufacturing Plants," which is available in the docket for this action, documents the results of the beyond-the-floor analysis.

**Table 4. Proposed Emission Limits for Mercury from Phosphate Rock Calciners at Phosphoric Acid Facilities**

Pollutant	Limit	Units
Existing and New Sources		
Hg	0.014	mg/dscm @ 3%O <sub>2</sub>

b. Determination of Work Practice Standards for Hydrogen Fluoride from Phosphate Rock Calciners

The 1999 Phosphoric Acid Manufacturing NESHAP (i.e., NESHAP subpart AA) included emissions limits for total F as a surrogate for HF for WPPA and SPA processes. A total F emission limit was not set for phosphate rock dryers or phosphate rock calciners. We propose to address the failure to set an emission limit in

this action. Test data collected from industry in 2014 show HF emissions from phosphate rock calciners, although more than half of the data are below-the-method detection limit (BDL). CAA section 112(h) (1) states that the Administrator may prescribe a work practice standard or other requirements, consistent with the provisions of CAA sections 112(d) or (f), in those cases where, in the judgment of the Administrator, it is not feasible to enforce an emission standard. CAA section 112(h) (2) (B) further defines the term "not feasible" in this context to apply when "the application of measurement technology to a particular class of sources is not practicable due to technological and economic limitations." Therefore, we are proposing work practice standards for HF emissions from phosphate rock calciners. Rock dryers are no longer used in this source category. Therefore, we are not proposing a limit or work practice standard for HF from rock dryers.

In response to a January 2014 CAA section 114 request, the EPA received HF emissions testing results by EPA Method 320 for one phosphate rock calciner. Of the six test runs reported to EPA, four were reported as BDL. The detected concentrations were, on average, only 20 percent above the method detection limit. The expected measurement imprecision for an emissions value occurring at or near the method detection limit is about 40 to 50 percent. Because the HF emission levels are BDL or near

BDL, the measured concentration values are questionable for HF. As a result, we are uncertain of the true levels of HF emitted from phosphate rock calciners.

Because approximately 67 percent of the HF data collected using EPA Method 320 were BDL, and the fact that the detected concentrations were, on average, only 20 percent above the method detection limit, the EPA concludes that HF emissions from phosphate rock calciners cannot practicably be measured. As a result, we are proposing work practice standards in place of a numeric emission limit for HF from phosphate rock calciners.

According to information provided by industry, phosphate rock calciners are operated to remove organic content from the phosphate rock in efforts to produce products with low organic content (refer to the memorandum, "Summary of August 14, 2012 U.S. EPA Meeting with PCS Phosphate," which is available in the docket for this action). Based on review of available literature, liberation of fluorine takes place at temperatures between approximately 2,500 and 2,750 degrees Fahrenheit (in addition to adding defluorinating agents), whereas removal of organic matter and dissociation of carbonates is typically carried out between 1,200 and 1,830 degrees Fahrenheit. Process flow diagrams submitted by industry in response to an April 2010 and January 2014 CAA section 114 request indicate that the phosphate rock calciners currently in operation maintain a

calcination temperature of less than 1,600 degrees Fahrenheit. Based on this information, we conclude that maintaining the temperature of the phosphate rock calciner fluidized bed at less than 1,600 degrees Fahrenheit will minimize emission of HF. Therefore, we are proposing a maximum calcination temperature of less than 1,600 degrees Fahrenheit for phosphate rock calciners as a work practice standard to control HF emissions. The facility that operates calciners currently maintains temperatures below 1,600 degrees Fahrenheit, as such, we do not expect any costs of control with this proposed work practice requirement.

In addition, particulate emissions from the calciners currently in operation are controlled using a combination of an absorber (i.e., a Venturi-type wet scrubbing system) and an electrostatic precipitator. As discussed in section IV.D.1 of this preamble, the Phosphoric Acid Manufacturing source category uses wet scrubbing technology (including Venturi-type wet scrubbing systems) to control HF emissions from various processes located at the source category. Because HF is highly soluble in water, we expect that, if HF is present in the calcination exhaust stream in any amount, the absorbers currently in operation are achieving some level of emission reduction. As a result, we are proposing to require that emissions from phosphate rock calciners be routed to an

absorber, in addition to proposing a maximum calcination temperature, to limit emissions of HF from phosphate rock calciners.

Refer to the memorandum, "Maximum Achievable Control Technology (MACT) Floor Analysis for the Phosphate Rock Calciners at Phosphoric Acid Manufacturing Plants," available in the docket for this action, for additional information regarding the determination of the work practice standards to control HF emissions. The EPA did not identify any beyond-the-floor options for reducing HF emissions from the phosphate rock calciners other than the proposed work practice standard.

## 2. Gypsum Dewatering Stack and Cooling Pond Work Practices

We conducted an evaluation of fugitive HF emissions from gypsum dewatering stacks and cooling ponds and determined that these fugitive sources contribute the majority of HF emissions from phosphoric acid facilities (see the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket). The 1999 Phosphoric Acid Manufacturing NESHAP (i.e., NESHAP subpart AA) did not include emission limits or require work practices for control of fugitive HF emissions from gypsum dewatering stacks, or cooling ponds. We are proposing standards that will control HAP emissions from gypsum dewatering stacks and cooling ponds. We are proposing work

practices instead of numeric emission limits because it is "not feasible to prescribe or enforce an emission standard" for these emissions because they are not "emitted through a conveyance designed and constructed to emit or capture such pollutant" (see CAA section 112(h)(2)(A)) as the several hundred acres average size of these sources makes conveyance impractical. The work practices would apply to any existing or new gypsum dewatering stacks or cooling ponds at a source subject to this subpart.

A review of state requirements for regulated facilities and current literature on the industry revealed work practices that include submerging the discharge pipe below the surface of the cooling pond; wetting the gypsum dewatering stack areas during hot or dry periods to minimize dust formation; using rim ditch (cell) building techniques that minimize the overall surface area of the gypsum dewatering stack and pond; applying slaked lime to the gypsum dewatering stack surfaces; and applying soil caps and vegetation to inactive gypsum dewatering stacks. After review of these various state requirements, the EPA believes that the control measures required by the states for these facilities are effective in reducing fugitive emissions. These measures are, therefore, consistent with CAA section 112(d) controls and reflect a level of performance analogous to a MACT floor. See CAA section 112(h)(1) (in promulgating work practices, the EPA is to adopt standards "which in the

Administrator's judgment [are] consistent with section (d) or (f) of this section").

We are proposing that facilities develop a site-specific gypsum dewatering stack and cooling pond management plan to control fugitive emissions. We have developed a list of control techniques for facilities to use in development of this management plan. These techniques include: introducing cooling water or gypsum slurry into a pond below the surface in order to minimize aeration of F in the water; wetting the active gypsum dewatering stack areas during hot or dry periods to minimize dust formation; using cell building techniques that minimize the overall surface area of the active gypsum dewatering stack; applying slaked lime to the active gypsum dewatering stack surfaces; and applying soil caps and vegetation to all side slopes of the active gypsum dewatering stack up to 50 feet below the stack top. The memorandum, "Analysis of Requirements for Gypsum Dewatering Stacks and Cooling Ponds at Phosphoric Acid Manufacturing Plants," which is available in the docket, provides more detail for choosing these control measures.

The varying geographic locations of facilities influence the composition of the phosphate ore mined and the ambient meteorological conditions, both of which will influence best management practices. Therefore, we believe that it is most effective for sources to determine the best practices that are

to be incorporated into their site-specific management plan. However, as previously noted, sources would be required to incorporate management practices from the list of options being proposed.

We are also proposing a work practice applicable to facilities when new gypsum dewatering stacks are constructed that would limit the size of active gypsum dewatering stacks and control fugitive emissions. When new gypsum dewatering stacks are constructed, the ratio of total active gypsum dewatering stacks area (i.e., sum of the footprint acreage of all existing and new active gypsum dewatering stacks combined) to annual phosphoric acid manufacturing capacity must not be greater than 80 acres per 100,000 tons of annual phosphoric acid manufacturing capacity (equivalent  $P_2O_5$  feed).

The extensive area that gypsum dewatering stacks encompass is a direct correlation to their high HF emissions. This is seen when estimating emissions from gypsum dewatering stacks, where emission factors are applied (tons HF per acre per year). In addition, gypsum dewatering stacks are continuously releasing emissions unless they are properly covered and closed. Limiting the size of gypsum dewatering stacks would minimize emissions by creating an upper bound on emissions; this would require appropriate foresight and planning of the new gypsum dewatering stack construction process to ensure the gypsum dewatering stack



area to manufacturing capacity ratio is not exceeded (i.e., facilities may need to close gypsum dewatering stacks to comply). While certain states already require the closure of gypsum dewatering stacks at the end of their life, this work practice would apply to facilities in all states and would ensure that gypsum dewatering stacks are appropriately considered from an emissions perspective in all phases of their life.

To develop the limit of 80 acres per 100,000 tons of annual phosphoric acid manufacturing capacity, we evaluated the area of active gypsum dewatering stacks to manufacturing capacity for each facility. We expected facilities with greater manufacturing capacities to, in most cases, require larger gypsum dewatering stack areas, because higher acid manufacturing rates result in higher gypsum generation rates; however, this was not the case. Based on the available data, we did not detect a correlation between gypsum stack dewatering area and phosphoric acid manufacturing capacity.

We considered that the size of active gypsum dewatering stacks at a facility is dynamic and does not remain the same over time. We also considered other factors that influence gypsum dewatering stack size such as the actual area available for stack construction, closure of recently active stacks, and local permitting limitations. Gypsum dewatering stacks also

serve the fertilizer manufacturing processes in addition to the phosphoric acid manufacturing processes as a source of cooling water, wash water, process water and slurry water. As a result, we concluded that the size of gypsum dewatering stacks is a function of several factors, including process optimization. Nonetheless, we still believe that phosphoric acid manufacturing capacity has a significant impact on the size of gypsum dewatering stacks. As a result, we are proposing a size limit based on the current operation of 10 out of 12 facilities. We believe this upper limit captures the complexities of gypsum dewatering stack size determination, but provides a reasonable limit on the size of active stacks in the future.

Further discussion on the site-specific gypsum dewatering stack and cooling pond management plan and details on the calculation of the ratio of gypsum dewatering stack area to phosphoric acid manufacturing capacity is provided in the memorandum, "Analysis of Requirements for Gypsum Dewatering Stacks and Cooling Ponds at Phosphoric Acid Manufacturing Plants," which is available in the docket for this action. We solicit comment on the proposed site-specific gypsum dewatering stack and cooling pond management plan. We are also seeking comment on other approaches for minimizing fugitive emissions from gypsum dewatering stacks including, but not limited to: Limiting the size of active gypsum dewatering stacks independent

of phosphoric acid manufacturing capacity, and requiring owners or operators to apply soil caps and vegetation to all side slopes (up to a certain distance below the stack top) for all new active gypsum dewatering stacks and new gypsum cells that are built on to (or adjacent to) existing active gypsum dewatering stacks.

B. What are the results of the risk assessment and analyses for the Phosphoric Acid Manufacturing source category?

The preamble sections below summarize the results of the risk assessment for the Phosphoric Acid Manufacturing source category. The complete risk assessment, Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing, is available in the docket for this action.

1. Inhalation Risk Assessment Results

The basic chronic inhalation risk estimates presented here are the maximum individual lifetime cancer risk, the maximum chronic HI and the cancer incidence. We also present results from our acute inhalation impact screening in the form of maximum HQs, as well as the results of our preliminary screening for potential non-inhalation risks from PB-HAP. Also presented are the HAP "drivers," which are the HAP that collectively contribute 90 percent of the maximum cancer risk or maximum HI at the highest exposure location.

The inhalation risk results for this source category indicate that maximum lifetime individual cancer risks are less than 1-in-1 million. The total estimated cancer incidence from this source category is 0.0002 excess cancer cases per year, or one excess case in every 5,000 years. The maximum chronic non-cancer TOSHI value for the source category could be up to 0.2 associated with emissions of hydrofluoric acid from gypsum dewatering stacks and cooling ponds, indicating no significant potential for chronic non-cancer impacts.

We analyzed the potential differences between actual emissions levels and calculated the maximum emissions allowable under the MACT standards for every emission process group for this source category. Based upon the above analysis, we multiplied the modeled actual risks for the MIR facility with site-specific process multipliers to estimate allowable risks under the MACT. We deemed this approach sufficient due to the low actual modeled risks for the source category. The maximum lifetime individual cancer risks based upon allowable emissions are still less than 1-in-1 million. The maximum chronic non-cancer TOSHI value increased to an HI of 0.3.

## 2. Acute Risk Results

Worst-case acute HQs were calculated for every HAP that has an acute benchmark. Two facilities were identified with HQ values greater than 1. For cases where the acute HQ from the

screening analysis was greater than 1, we further refined the estimates by determining the highest HQ value that is outside facility boundaries. The highest refined, worst-case acute HQ value is 2 (based on the acute reference exposure level (REL) for hydrofluoric acid). The HQ values represent upper-bound risk estimates for both facilities; the off-site locations for these sites were either located in a rural location in which public access is limited or in an off-site area that may be owned by the facility. The primary source of emissions is fugitive air releases from gypsum dewatering stacks and cooling ponds. See the memorandum, "Emissions Data Used in Residual Risk Modeling: Phosphoric Acid and Phosphate Fertilizer Production Source Category," which is available in the docket for this rulemaking, for a detailed description of the methodology we used to develop the maximum hourly emissions for this source category. Based on maximum hourly emission estimates available by emission process group, an emissions multiplier of 1 was used to estimate the peak hourly emission rates for this source category.

To better characterize the potential health risks associated with estimated worst-case acute exposures to HAP, we examined a wider range of available acute health metrics than we examine for our chronic risk assessments. This is in response to the acknowledgement that there are generally more data gaps and inconsistencies in acute reference values than there are in

chronic reference values. By definition, the acute reference exposure level relied on in the analysis, the California Reference Exposure Level (CA-REL), represents a health-protective level of exposure, with no risk anticipated below those levels, even for repeated exposures; however, the health risk from higher-level exposures is unknown. Therefore, when an REL is exceeded, we have used secondary acute dose-response exposure levels, including the AEGL-1 and ERPG, as a second comparative measure. The worst-case, maximum estimated 1-hour exposure to hydrofluoric acid outside the facility fence line for the Phosphoric Acid Manufacturing source category is 0.5 ug/m<sup>3</sup>. This estimated worst-case exposure exceeds the 1-hour REL by a factor of 2 ( $HQ_{REL} = 2$ ) and is below the 1-hour AEGL-1 ( $HQ_{AEGL-1} = 0.6$ ). See the memorandum, "Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing" in the docket for this rulemaking for additional information.

### 3. Multipathway Risk Screening Results

For the Phosphoric Acid Production source category, the EPA conducted a Tier I screening-level evaluation of the potential human health risks associated with emissions of PB-HAP. The PB-HAP emitted by facilities in this category include Hg compounds (12 facilities), Pb compounds (12 facilities), and cadmium compounds (12 facilities), dioxin/furan compounds (1 facility),

and POM compounds (1 facility). We compared reported emissions of PB-HAP to the Tier I screening emission thresholds established by the EPA for the purposes of the RTR risk assessments. One facility emitted divalent Hg ( $\text{Hg}^{2+}$ ) above the Tier I screening threshold level, exceeding the screening threshold by a factor of 7 and the cadmium emissions exceeded the cadmium screening threshold by a factor of 2. Consequently, we conducted a Tier II screening assessment.

For the Tier II screening assessment, we refined our  $\text{Hg}^{2+}$  and cadmium analysis with additional site-specific information. The additional site-specific information included the land use around the facilities, the location of fishable lakes within 50 km of the facility, and local wind direction and speed. The Tier II Screen also included two scenarios to evaluate health risks by evaluating risks separately for two hypothetical receptors; (1) subsistence travelling angler and (2) subsistence farmer. The travelling fisher scenario is based on the idea that an adult fisher might travel to multiple lakes if the first (i.e., highest-concentration) lake is unable to provide him an adequate catch to satisfy the assumed ingestion rate (i.e., 373 grams/day for adults) over a 70-year time frame. This assessment uses the assumption that the biological productivity limitation of each lake is 1 gram of fish per acre of water, meaning that in order to fulfill the adult ingestion rate, the fisher will need to fish

from 373 total acres of lakes. The result of this analysis was the development of a site-specific emission-screening threshold for  $\text{Hg}^{2+}$ . We compared this refined Tier II screening threshold for  $\text{Hg}^{2+}$  to the facility's  $\text{Hg}^{2+}$  emissions. The facility's emissions from both pollutants of concern are below the Tier II screening threshold, indicating no potential for multipathway impacts of concern from this facility.

For the other PB-HAP emitted by facilities in the source category, no facilities emit POM, or dioxin compounds above the Tier I screening threshold level. Pb is a PB-HAP, but the NAAQS value (which was used for the chronic noncancer risk assessment) takes into account multipathway exposures, so a separate multipathway screening value was not developed. Since we did not estimate any exceedances of the NAAQS in our chronic noncancer risk assessment, we do not expect any significant multipathway exposure and risk due to Pb emissions from these facilities. For more information on the multipathway screening assessment conducted for this source category, see the memorandum, "Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing" provided in the docket for this rulemaking.

#### 4. Environmental Risk Screening Results

As described in section III.A.5 of this preamble, we conducted an environmental risk screening assessment for the



Phosphoric Acid Manufacturing source category. In the Tier I screening analysis for PB-HAP other than Pb (which was evaluated differently, as noted in section III.A.5 of this preamble), none of the individual modeled concentrations for any facility in the source category exceed any of the ecological benchmarks (either the LOAEL or NOAEL). Therefore, we did not conduct a Tier II screening assessment. For Pb, we did not estimate any exceedances of the secondary Pb NAAQS.

For acid gases, the average modeled concentration around each facility (i.e., the average concentration of all off-site data points in the modeling domain) did not exceed any ecological benchmarks (either the LOAEL or NOAEL). For HCl, each individual concentration (i.e., each off-site data point in the modeling domain) was below the ecological benchmarks for all facilities. For HF, less than 1 percent of the off-site modeling domain for the source category was above the LOAEL ecological benchmark. The largest facility exceedance area represented 3 percent of the facility's 50 km modeling domain. We did not identify an adverse environmental effect as defined in CAA section 112(a)(7) from HAP emissions from this source category.

#### 5. Facility-wide Risk Results

The facility-wide MIR and TOSHI are based on emissions, as identified in the NEI, from all emissions sources at the identified facilities. The results of the facility-wide analysis

indicate that all 12 facilities with phosphoric acid manufacturing processes have a facility-wide cancer MIR less than or equal to 1-in-1 million. The maximum facility-wide TOSHI for the source category is 0.2. The risk results are summarized in Table 5 of this preamble.

**Table 5. Human Health Risk Assessment for Phosphoric Acid Manufacturing**

Category & Number of Facilities Modeled	Cancer MIR (in 1 million)		Cancer Incidence (cases per year)	Population with risks of 1-in-1 million or more	Population with risks of 10-in-1 million or more	Max Chronic Non-cancer HI		Worst-case Max Acute Non-cancer HQ
	Based on Actual Emissions	Based on Allowable Emissions				Based on Actual Emissions	Based on Allowable Emissions	
Phosphoric Acid (12 facilities)	0.09	0.09	0.0002	0	0	0.2	0.3	HQ <sub>REL</sub> = 2 (hydrofluoric acid) HQ <sub>AEG</sub> -1 = 0.6 (hydrofluoric acid)
Facility-wide (12 facilities)	0.5	0.5	0.001	0	0	0.2	0.3	—

#### 6. What demographic groups might benefit from this regulation?

To determine whether or not to conduct a demographics analysis, which is an assessment of risks to individual demographic groups, we look at a combination of factors including the MIR, non-cancer TOSHI, population around the facilities in the source category and other relevant factors. For the Phosphoric Acid Manufacturing source category, the MIR is less than 1-in-1 million and the HI is less than 1. Therefore, we did not conduct an assessment of risks to individual demographic groups for this rulemaking. However, we did conduct a proximity analysis, which identifies any

overrepresentation of minority, low income or indigenous populations near facilities in the source category. The results of this analysis are presented in the section of this preamble titled, "Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations."

C. What are our proposed decisions regarding risk acceptability, ample margin of safety and adverse environmental effects for the Phosphoric Acid Manufacturing source category?

1. Risk Acceptability

The risk assessment results for the phosphoric acid manufacturing source category indicate that all facilities have a cancer MIR less than 1-in-1 million. The maximum TOSHI is less than 1, and the maximum worst-case acute HQ is less than the AEGL-1 benchmark. Therefore, we propose that the risks posed by emissions from this source category are acceptable.

2. Ample Margin of Safety Analysis and Proposed Controls

Under the ample margin of safety analysis, we evaluate the cost and feasibility of available control technologies and other measures (including the controls, measures, and costs evaluated under the technology review) that could be applied in this source category to further reduce the risks due to emissions of HAP identified in our risk assessment, as well as the health impacts of such potential additional measures. As noted in our

discussion of the technology review in section III.C of this preamble, no measures (beyond those already in place or that we are proposing today under CAA sections 112 (d) (2) and (d) (3)) were identified for reducing HAP emissions from the Phosphoric Acid Manufacturing source category. In addition, because our analyses show that the maximum baseline chronic cancer risk is below 1-in-1 million, the maximum chronic non-cancer HI is less than 1, and the worst-case acute HQ is less than the AEGL-1, minimal reductions in risk could be achieved even if we identified measures that could reduce HAP emissions further. Based on the discussion above, we propose that the current standards provide an ample margin of safety to protect public health.

Although the current standards were found to provide an ample margin of safety to protect public health, we also are proposing additional standards to address previously unregulated emissions of Hg and HF from phosphate rock calciners. We are proposing Hg emission limits and HF work practice standards for the phosphate rock calciners at phosphoric acid facilities, resulting in an estimated HAP reduction between 165 and 220 pounds per year of Hg. We are also proposing that sources develop management plans for fugitive emissions from cooling ponds and gypsum dewatering stacks. As noted above, we are proposing that the MACT standard, prior to the implementation of

the proposed emission limits and work practice standards for phosphate rock calciners discussed in this section of the preamble and the fugitive emissions work practice standard, provides an ample margin of safety to protect public health. Therefore, we maintain that, after the implementation of the phosphate rock calciner emission limits and work practice standards, and the fugitive emissions work practice standard, the rule will continue to provide an ample margin of safety to protect public health. Consequently, we do not believe it will be necessary to conduct another residual risk review under CAA section 112(f) for this source category 8 years following promulgation of new emission limits and work practice standards for phosphate rock calciners and promulgation of new fugitive emission work practices, merely due to the addition of these MACT requirements. While our decisions on risk acceptability and ample margin of safety are supported even in the absence of these reductions (from calciners, cooling ponds and gypsum dewatering stacks), if we finalize the proposed requirements for these sources, they would further strengthen our conclusions that risk is acceptable with an ample margin of safety to protect public health.

Although we did not identify any new technologies to reduce risk from this source category, we are specifically requesting comment on whether there are additional control measures that

may be able to reduce risks from the source category. We request any information on potential emission reductions of such measures, as well the cost and health impacts of such reductions to the extent they are known.

### 3. Adverse Environmental Effects

Based on the results of our environmental risk screening assessment, we conclude that there is not an adverse environmental effect as a result of HAP emissions from the Phosphoric Acid Manufacturing source category. We are proposing that it is not necessary to set a more stringent standard to prevent, taking into consideration costs, energy, safety and other relevant factors, an adverse environmental effect.

### D. What are the results and proposed decisions based on our technology review for the Phosphoric Acid Manufacturing source category?

#### 1. NESHAP Technology Review

In order to fulfill our obligations under CAA section 112(d)(6), we conducted a technology review to identify new developments that may advise revisions to the current NESHAP standards applicable to the Phosphoric Acid Manufacturing source category (i.e., NESHAP subpart AA). In conducting our technology review for the Phosphoric Acid Manufacturing source category, we utilized the RBLC database and the data submitted by facilities in response to the April 2010 CAA section 114 request.

Based on our review of the RBLC, we did not find any new developments in practices, processes and control technologies that have been applied since the original NESHAP to reduce emissions from phosphoric acid manufacturing plants.

Based on our review of the CAA section 114 data (see memorandum, "CAA Section 111(b)(1)(B) and 112(d)(6) Reviews for the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production Source Categories," which is available in Docket No. EPA-HQ-OAR-2012-0522), we determined that the control technologies used to control stack emissions at phosphoric acid manufacturing plants have not changed since the EPA published the 1996 memorandum, "National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing and Phosphate Fertilizers Production; Proposed Rules - Draft Technical Support Document and Additional Technical Information," which is available in Docket ID No. A-94-02.

In general, the Phosphoric Acid Manufacturing source category continues to use wet scrubbing technology to control HF emissions from the various processes located at this source category (e.g., WPPA, SPA and PPA). We did not identify any technical developments in wet scrubbing methods used at phosphoric acid manufacturing plants. As noted in the 1996 memorandum discussed above, the type and configuration of the wet scrubbing technology varies significantly between facilities

and between process lines within a facility. In addition, electrostatic precipitators have been installed to control PM emissions at the phosphate rock calciners. In order to determine the differences in effectiveness of control technologies we identified, we reviewed the emissions data submitted by facilities in response to the April 2010 and January 2014 CAA section 114 requests.

For WPPA process lines, differences in facility emissions may be related to the control technology used; however, it is difficult to discern whether this is the case because each WPPA process line operates a unique equipment and control technology configuration (i.e., there are no WPPA process lines that operate in similar configurations for comparison).

We observed some differences in total F emissions from SPA process lines. However, we did not find any patterns in emissions reductions based on control technology used because most of the SPA process lines that were tested operate a unique equipment and control technology configuration. For all SPA process lines that we examined, emissions from the evaporators are sent to a single wet scrubber, but the type of wet scrubber used at these SPA process lines varies.

Some SPA process lines include an oxidation step to remove organic impurities from the acid. For one facility, we noted relatively high HF emissions from a currently uncontrolled



oxidation process. The application of wet scrubbing control technology would be consistent with other SPA process lines, where all applicable emission points are controlled by wet scrubbers. Available information from similar sources controlled by wet scrubbers indicates that the use of wet scrubbing control technology would result in a reduction of emissions from the identified oxidation process to levels consistent with other industry wide SPA emissions. Because the facility already has wet scrubbing technology for their SPA process line, they should only need to install additional ductwork from the uncontrolled emission point to the wet scrubber. Therefore, it would not be necessary to install a new wet scrubber to control the oxidation process emissions. Refer to the memorandum, "Control Costs and Emissions Reductions for Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket, for additional discussion regarding the uncontrolled oxidation process.

For PPA process lines, it is not possible to discern whether the control technology used is more (or less) effective than another control technology because there is only one set of data.

We believe that observed differences in HAP emissions from WPPA, SPA and PPA process lines, except for the one uncontrolled oxidation process at a SPA process line, are the result of

factors other than control technology (e.g., subtle differences in sampling and analytical techniques, age of control equipment and differences in facility operating parameters). Therefore, neither these data nor any other information we have examined show that there has been a significant improvement in the add-on control technology or other equipment since promulgation of NESHAP subpart AA.

There are six existing phosphate rock calciners located at one facility. These are the only phosphate rock calciners in the source category. The one facility with calciners had wet scrubbers installed prior to the current NESHP PM limits being promulgated. To meet the current PM limits, the facility added WESP in addition to the previously installed wet scrubbers. Based on the data submitted by facilities in response to the April 2010 CAA section 114 request, PM emissions from these units vary from 0.0012 to 0.0695 grains PM per dry standard cubic foot. This range of emissions indicate that the current limits represent expected performance of the control technology configuration. We did not identify any new cost-effective technologies that could reduce emissions further from this source. Based on this information, we are not proposing any revisions to the PM limits from calciners.

We also reviewed the CAA section 114 responses to identify any work practices, pollution prevention techniques and process

changes at phosphoric acid manufacturing plants that could achieve emission reductions. We did not identify any developments regarding practices, techniques, or process changes that affect point source emissions from this source category. See the memorandum, "CAA Section 111(b)(1)(B) and 112(d)(6) Reviews for the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production Source Categories," which is available in the docket, for additional details on the technology review.

In light of the results of the technology review, we conclude that additional standards are not necessary pursuant to CAA section 112(d)(6) and we are not proposing changes to NESHAP subpart AA as part of our technology review. We solicit comment on our proposed decision.

## 2. NSPS Review

Pursuant to CAA section 111(b)(1)(B), we conducted a review to identify new developments that may advise revisions to the current NSPS standards applicable to the Phosphoric Acid Manufacturing source category (i.e., NSPS subparts T and U). This review considered both (1) whether developments in technology or other factors support the conclusion that a different system of emissions reduction has become the "best system of emissions reduction" and (2) whether emissions limitations and percent reductions beyond those required by the standards are achieved in practice.

As discussed in section IV.D.1 of this preamble, the EPA conducted a thorough search of the RBLC, section 114 data received from industry and other relevant sources. The emission sources for both NSPS and the control technologies that would be employed are the same as those used for the NESHAP regulating phosphoric acid plants, yielding the same results of no cost-effective emission reductions strategies being identified.

Therefore, we are proposing that revisions to NSPS subpart T and subpart U standards are not appropriate pursuant to CAA section 111(b)(1)(B). We solicit comment on our proposed determination.

E. What other actions are we proposing for the Phosphoric Acid Manufacturing source category?

In addition to the proposed actions described above, we are proposing additional revisions or clarifications. We are proposing clarifications to the applicability of NESHAP subpart AA, NSPS subpart T, and NSPS subpart U. In addition, we are proposing revisions to the startup, shutdown and malfunction (SSM) provisions of NESHAP subpart AA in order to ensure that they are consistent with the court decision in Sierra Club v. EPA, 551 F. 3d 1019 (D.C. Cir. 2008), which vacated two provisions that exempted sources from the requirement to comply with otherwise applicable CAA section 112(d) emission standards during periods of SSM. We also are proposing various other

changes to testing, monitoring, recordkeeping and reporting requirements in NESHAP subpart AA, NSPS subpart T, and NSPS subpart U. Our analyses and proposed changes related to these issues are discussed in this section of this preamble.

## 1. Clarifications to Applicability and Certain Definitions

### a. NESHAP Subpart AA

For the applicability section of NESHAP subpart AA, we determined that it was unclear whether emissions from clarifiers and defluorination systems at wet-process phosphoric acid process lines, and oxidation reactors at superphosphoric acid process lines, were regulated by the Phosphoric Acid Manufacturing NESHAP. To ensure the emission standards we are proposing reflect inclusion of HAP emissions from all sources in the defined source category, as initially intended in the rule promulgation, we believe it necessary to clarify the applicability of the NESHAP. Therefore, we are proposing to amend the definitions of wet-process phosphoric acid process line, superphosphoric acid process line and purified phosphoric acid process line to include relevant emission points, including clarifiers and defluorination systems at wet-process phosphoric acid process lines, and oxidation reactors at superphosphoric acid production lines. We are also proposing to remove text from the applicability section that is duplicative of the revised definitions. Defluorination of phosphoric acid is performed at

several facilities with at least two facilities using diatomaceous earth for the process. Oxidation reactors are used in the production of SPA at four facilities to remove organics by mixing SPA with nitric acid, ammonium nitrate or potassium permanganate. These clarifications to the applicability and definitions of the standard are more reflective of the source category definition that includes any facility engaged in the production of phosphoric acid.

A technical memorandum, "Applicability Clarifications to the Phosphoric Acid Manufacturing Production Source Category," in the Docket ID No. EPA-HQ-OAR-2012-0522 provides further information on the applicability clarifications proposed in this action.

We also are proposing to revise the term "gypsum stack" to "gypsum dewatering stack" in order to help clarify the meaning of this fugitive emission source, and to alleviate any potential misconception that the "stack" is a point source. Other changes include the addition of definitions for "cooling pond," "phosphoric acid defluorination process," "process line" and "raffinate stream".

#### b. NSPS Subpart T

For the applicability section of NSPS subpart T, we determined that it was unclear whether emissions from clarifiers and defluorination systems at wet-process phosphoric acid plants

were regulated by the NSPS. To ensure the emission standards we are proposing reflect inclusion of total F emissions from all sources in the defined source category, as initially intended in the rule promulgation, we believe it necessary to clarify the applicability of the NSPS. Therefore, we are proposing to amend the definition of wet-process phosphoric acid plant to include relevant emission points, including clarifiers and defluorination systems. We are also proposing to remove text from the applicability section that is duplicative of the revised definitions. Defluorination of phosphoric acid is performed at several facilities with at least two facilities using diatomaceous earth for the process. These clarifications to the applicability and definitions of the standard are more reflective of the source category definition that includes any facility engaged in the production of phosphoric acid.

A technical memorandum, "Applicability Clarifications to the Phosphoric Acid Manufacturing Production Source Category," in the Docket ID No. EPA-HQ-OAR-2012-0522 provides further information on the applicability clarifications proposed in this action.

#### c. NSPS Subpart U

For the applicability section of NSPS subpart U, we determined that it was unclear whether emissions from oxidation reactors at superphosphoric acid plants were regulated by the

NSPS. To ensure the emission standards we are proposing reflect inclusion of total F emissions from all sources in the defined source category, as initially intended in the rule promulgation, we believe it necessary to clarify the applicability of the NSPS. Therefore, we are proposing to amend the definition of superphosphoric acid plant to include relevant emission points, including oxidation reactors. We are also proposing to remove text from the applicability section that is duplicative of the revised definitions. Oxidation reactors are used in the production of SPA at four facilities to remove organics by mixing SPA with nitric acid, ammonium nitrate, or potassium permanganate. These clarifications to the applicability and definitions of the standard are more reflective of the source category definition that includes any facility engaged in the production of phosphoric acid.

A technical memorandum, "Applicability Clarifications to the Phosphoric Acid Manufacturing Production Source Category," in the Docket ID No. EPA-HQ-OAR-2012-0522 provides further information on the applicability clarifications proposed in this action.

2. What are the startup, shutdown and malfunction requirements?

The United States Court of Appeals for the District of Columbia Circuit vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP



during periods of SSM (Sierra Club v. EPA, 551 F.3d 1019 (D.C. Cir. 2008), cert. denied, 130 S. Ct. 1735 (U.S. 2010)).

Specifically, the Court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1) holding that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature and that the SSM exemption violates the CAA's requirement that some CAA section 112 standards apply continuously.

We are proposing the elimination of the SSM exemption in this rule. Consistent with Sierra Club v. EPA, the EPA is proposing standards in this rule that apply at all times. We are also proposing several revisions to appendix A of subpart AA (the General Provisions Applicability Table) as explained in more detail below. For example, we are proposing to eliminate the incorporation of the requirement in the General Provisions that the source develop an SSM plan. We also are proposing to eliminate and revise certain recordkeeping and reporting requirements related to the SSM exemption as further described below.

The EPA has attempted to ensure that the provisions we are proposing to eliminate are inappropriate, unnecessary or redundant in the absence of the SSM exemption. We are specifically seeking comment on whether we have successfully done so.

For the reasons explained below, we are proposing work practice standards for periods of startup and shutdown in lieu of numerical emission limits. CAA section 112(h)(1) states that the Administrator may promulgate a design, equipment or operational work practice standard in those cases where, in the judgment of the Administrator, it is not feasible to prescribe or enforce an emission standard. CAA section 112(h)(2)(B) further defines the term "not feasible" in this context to apply when "the application of measurement technology to a particular class of sources is not practicable due to technological and economic limitations."

Startup and shutdown periods at phosphoric acid manufacturing facilities generally only last between 30 minutes to 6 hours. Because of the variability and the relatively short duration compared to the time needed to conduct a performance test, which typically requires a full working day, the EPA has determined that it is not feasible to prescribe a numerical emission standard for these periods. Furthermore, according to information provided by industry, it is possible that the feed rate (i.e., equivalent  $P_2O_5$  feed, or rock feed) can be zero during startup and shutdown periods. During these periods, it is not feasible to consistently enforce the emission standards that are expressed in terms of lb of pollutant/ton of feed.

Although we requested information on emissions and the operation of control devices during startup and shutdown periods in the CAA section 114 survey issued to the Phosphoric Acid Manufacturing source category, we did not receive any emissions data collected during a startup and shutdown period, and we do not expect that these data exist. However, based on the information for control device operation received in the survey, we concluded that the control devices could be operated normally during periods of startup or shutdown. Also, we believe that the emissions generated during startup and shutdown periods are lower than during steady-state conditions because the amount of feed materials introduced to the process during those periods is lower compared to normal operations. Therefore, if the emission control devices are operated during startup and shutdown, then HAP emissions will be the same or lower than during steady-state operating conditions.

Consequently, we are proposing a work practice standard rather than an emissions limit for periods of startup or shutdown. Control devices used on the various process lines in this source category are effective at achieving desired emission reductions immediately upon start-up. Therefore, during startup and shutdown periods, we are proposing that sources begin operation of any control device(s) in the production unit prior to introducing any feed into the production unit. We are also

proposing that sources must continue operation of the control device(s) through the shutdown period until all feed material has been processed through the production unit.

Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead they are, by definition sudden, infrequent and not reasonably preventable failures of emissions control, process or monitoring equipment. The EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards. Under CAA section 112, emissions standards for new sources must be no less stringent than the level "achieved" by the best controlled similar source and for existing sources generally must be no less stringent than the average emission limitation "achieved" by the best-performing 12 percent of sources in the category. There is nothing in CAA section 112 that directs the EPA to consider malfunctions in determining the level "achieved" by the best performing sources when setting emission standards. As the United States Court of Appeals for the District of Columbia Circuit has recognized, the phrase "average emissions limitation achieved by the best performing 12 percent of" sources "says nothing about how the performance of the best units is to be calculated." Nat'l Ass'n of Clean Water Agencies v. EPA, 734

F.3d 1115, 1141 (D.C. Cir. 2013). While the EPA accounts for variability in setting emissions standards, nothing in CAA section 112 requires the agency to consider malfunctions as part of that analysis. A malfunction should not be treated in the same manner as the type of variation in performance that occurs during routine operations of a source. A malfunction is a failure of the source to perform in a "normal or usual manner" and no statutory language compels EPA to consider such events in setting CAA section 112 standards.

Further, accounting for malfunctions in setting emission standards would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category and given the difficulties associated with predicting or accounting for the frequency, degree and duration of various malfunctions that might occur. For these reasons, the performance of units that are malfunctioning is not "reasonably" foreseeable. See, e.g., Sierra Club v. EPA, 167 F.3d 658, 662 (D.C. Cir. 1999) (the EPA typically has wide latitude in determining the extent of data gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to "invest the resources to conduct the perfect study."). See also, Weyerhaeuser v. Costle, 590 F.2d 1011, 1058 (D.C. Cir. 1978) ("In the nature of things, no general limit,

individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation." ). In addition, emissions during a malfunction event can be significantly higher than emissions at any other time of source operation. For example, if an air pollution control device with 99 percent removal goes off-line as a result of a malfunction (as might happen if, for example, the bags in a baghouse catch fire) and the emission unit is a steady state type unit that would take days to shut down, the source would go from 99-percent control to zero control until the control device was repaired. The source's emissions during the malfunction would be 100 times higher than during normal operations, and the emissions over a 4-day malfunction period would exceed the annual emissions of the source during normal operations. As this example illustrates, accounting for malfunctions could lead to standards that are not reflective of (and significantly less stringent than) levels that are achieved by a well-performing, non-malfunctioning source. It is reasonable to interpret CAA section 112 to avoid such a result. The EPA's approach to

malfunctions is consistent with CAA section 112 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 112 standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good-faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 112 standard was, in fact, "sudden, infrequent, not reasonably preventable" and was not instead "caused in part by poor maintenance or careless operation" 40 CFR 63.2 (definition of malfunction).

If the EPA determines in a particular case that enforcement action against a source for violation of an emission standard is warranted, the source can raise any and all defenses in that enforcement action and the federal district court will determine what, if any, relief is appropriate. The same is true for citizen enforcement actions. Similarly, the presiding officer in an administrative proceeding can consider any defense raised and determine whether administrative penalties are appropriate.

In summary, the EPA interpretation of the CAA and, in particular, CAA section 112, is reasonable and encourages

practices that will avoid malfunctions. Administrative and judicial procedures for addressing exceedances of the standards fully recognize that violations may occur despite good faith efforts to comply and can accommodate those situations.

In several prior CAA section 112 rules, the EPA had included an affirmative defense to civil penalties for violations caused by malfunctions in an effort to create a system that incorporates some flexibility, recognizing that there is a tension, inherent in many types of air regulation, to ensure adequate compliance while simultaneously recognizing that despite the most diligent of efforts, emission standards may be violated under circumstances entirely beyond the control of the source. Although the EPA recognized that its case-by-case enforcement discretion provides sufficient flexibility in these circumstances, it included the affirmative defense to provide a more formalized approach and more regulatory clarity. See Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1057-58 (D.C. Cir. 1978) (holding that an informal case-by-case enforcement discretion approach is adequate); but see Marathon Oil Co. v. EPA, 564 F.2d 1253, 1272-73 (9th Cir. 1977) (requiring a more formalized approach to consideration of "upsets beyond the control of the permit holder."). Under the EPA's regulatory affirmative defense provisions, if a source could demonstrate in a judicial or administrative proceeding that it had met the



requirements of the affirmative defense in the regulation, civil penalties would not be assessed. Recently, the United States Court of Appeals for the District of Columbia Circuit vacated an affirmative defense in one of the EPA's CAA section 112 regulations. NRDC v. EPA, 749 F.3d 1055 (D.C. Cir., 2014) (vacating affirmative defense provisions in CAA section 112 rule establishing emission standards for Portland cement kilns). The court found that the EPA lacked authority to establish an affirmative defense for private civil suits and held that under the CAA, the authority to determine civil penalty amounts in such cases lies exclusively with the courts, not the EPA. Specifically, the court found: "As the language of the statute makes clear, the courts determine, on a case-by-case basis, whether civil penalties are 'appropriate.'" See NRDC, 2014 U.S. App. LEXIS 7281 at \*21 ("[U]nder this statute, deciding whether penalties are 'appropriate' in a given private civil suit is a job for the courts, not EPA.").<sup>28</sup> In light of NRDC, the EPA is not including a regulatory affirmative defense provision in the proposed rule. As explained above, if a source is unable to comply with emissions standards as a result of a malfunction, the EPA may use its case-by-case enforcement discretion to provide flexibility, as appropriate. Further, as the D.C.

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<sup>28</sup> The court's reasoning in *NRDC* focuses on civil judicial actions. The Court noted that "EPA's ability to determine whether penalties should be assessed for Clean Air Act violations extends only to administrative penalties, not to civil penalties imposed by a court." *Id.*

Circuit recognized, in an EPA or citizen enforcement action, the court has the discretion to consider any defense raised and determine whether penalties are appropriate. Cf. *NRDC*, 2014 U.S. App. LEXIS 7281 at \*24 (arguments that violation were caused by unavoidable technology failure can be made to the courts in future civil cases when the issue arises). The same is true for the presiding officer in EPA administrative enforcement actions.<sup>29</sup>

a. 40 CFR 63.608(b) General Duty

We are proposing to revise the entry for 40 CFR 63.6(e)(1)(i) and (e)(1)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.6(e)(1)(i) describes the general duty to minimize emissions. Some of the language in that section is no longer necessary or appropriate in light of the elimination of the SSM exemption. We are proposing instead to add general duty regulatory text at 40 CFR 63.608(b) that reflects the general duty to minimize emissions while eliminating the reference to periods covered by an SSM exemption. The current language in 40 CFR 63.6(e)(1)(i) characterizes what the general duty entails

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<sup>29</sup> Although the *NRDC* case does not address the EPA's authority to establish an affirmative defense to penalties that is available in administrative enforcement actions, the EPA is not including such an affirmative defense in the proposed rule. As explained above, such an affirmative defense is not necessary. Moreover, assessment of penalties for violations caused by malfunctions in administrative proceedings and judicial proceedings should be consistent. Cf. CAA section 113(e) (requiring both the Administrator and the court to take specified criteria into account when assessing penalties).

during periods of SSM. With the elimination of the SSM exemption, there is no need to differentiate between normal operations, startup and shutdown and malfunction events in describing the general duty. Therefore, the language the EPA is proposing does not include that language from 40 CFR 63.6(e)(1). We are also proposing to revise the entry for 40 CFR 63.6(e)(1)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.6(e)(1)(ii) imposes requirements that are not necessary with the elimination of the SSM exemption or are redundant of the general duty requirement being added at 40 CFR 63.608(b).

b. SSM Plan

We are proposing to revise the entry for 40 CFR 63.6(e)(3) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Generally, these paragraphs require development of an SSM plan and specify SSM recordkeeping and reporting requirements related to the SSM plan. As noted, the EPA is proposing to remove the SSM exemptions. Therefore, affected units will be subject to an emission standard during such events. The applicability of a standard during such events will ensure that sources have ample incentive to plan for and achieve compliance and thus the SSM plan requirements are no longer necessary.

c. Compliance with Standards

We are proposing to revise the entry for 40 CFR 63.6(f) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." The current language of 40 CFR 63.6(f)(1) exempts sources from non-opacity standards during periods of SSM. As discussed above, the court in Sierra Club vacated the exemptions contained in this provision and held that the CAA requires that some CAA section 112 standard apply continuously. Consistent with Sierra Club, the EPA is proposing to revise standards in this rule to apply at all times.

d. 40 CFR 63.606 Performance Testing

We are proposing to revise the entry for 40 CFR 63.7(e)(1) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.7(e)(1) describes performance testing requirements. The EPA is instead proposing to add a performance testing requirement at 40 CFR 63.606(d). The performance testing requirements we are proposing to add differ from the General Provisions performance testing provisions in several respects. The proposed regulatory text does not allow testing during startup, shutdown or malfunction. The proposed regulatory does not include the language in 40 CFR 63.7(e)(1) that restated the SSM exemption and language that precluded startup and shutdown periods from being considered "representative" for purposes of performance testing. Furthermore, as in 40 CFR 63.7(e)(1), performance tests

conducted under this subpart should not be conducted during malfunctions because conditions during malfunctions are often not representative of operating conditions.

We are proposing that sources conduct performance tests during "maximum representative operating conditions for the process". Specifically, we are proposing that sources must operate your process during the performance test in such a way that results in the flue gas characteristics that are the most difficult for reducing emissions of the regulated pollutant(s) by the control device used. In an effort to provide more flexibility to owners and operators regarding the identification of the proper testing conditions, the most difficult condition for the control device may include, but is not limited to, the highest HAP mass loading rate to the control device, or the highest HAP mass loading rate of constituents that approach the limits of solubility for scrubbing media. The EPA understands that there may be cases where efficiencies are dependent on other characteristics of emission streams, including the characteristics of components and the operating principles of the devices. For example, the solubility of emission stream components in scrubbing media, or emission stream component affinity in carbon adsorption systems can also define the most difficult condition for a particular control device. The EPA is also proposing to add language that requires the owner or

operator to record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent maximum representative operating conditions. Section 63.7(e) requires that the owner or operator make available to the Administrator upon request such records "as may be necessary to determine the condition of the performance test," but did not specifically require the owner or operator to record the information. The regulatory text the EPA is proposing to add builds on that requirement and makes explicit the requirement to record the information.

#### e. Monitoring

We are proposing to revise the entry for 40 CFR 63.8(c)(1)(i) and (iii) in the General Provisions table by changing the "yes" in column three to a "no." The cross-references to the general duty and SSM plan requirements in those subparagraphs are not necessary in light of other requirements of 40 CFR 63.8 that require good air pollution control practices (40 CFR 63.8(c)(1)) and that set out the requirements of a quality control program for monitoring equipment (40 CFR 63.8(d)).

We are proposing to revise the entry for 40 CFR 63.8(d)(3) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." The final sentence in 40 CFR

63.8(d)(3) refers to the General Provisions' SSM plan requirement, which is no longer applicable. The EPA is proposing to add to the rule at 40 CFR 63.608(c)(4) text that is identical to 40 CFR 63.8(d)(3), except that the final sentence is replaced with the following sentence: "You must include the program of corrective action required under §63.8(d)(2) in the plan."

f. 40 CFR 63.607 Recordkeeping

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(i) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.10(b)(2)(i) describes the recordkeeping requirements during startup and shutdown. These recording provisions are no longer necessary because the EPA is proposing that recordkeeping and reporting applicable to normal operations will apply to startup and shutdown. In the absence of special provisions applicable to startup and shutdown, such as a startup and shutdown plan, there is no reason to retain additional recordkeeping for startup and shutdown periods.

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.10(b)(2)(ii) describes the recordkeeping requirements during a malfunction. The EPA is proposing to add such requirements to 40 CFR 63.607(b). The regulatory text we are proposing to add

differs from the General Provisions it is replacing in that the General Provisions requires the creation and retention of a record of the occurrence and duration of each malfunction of process, air pollution control and monitoring equipment. The EPA is proposing that this requirement apply to any failure to meet an applicable standard and that the source record the date, time and duration of the failure rather than the "occurrence." The EPA is also proposing to add to 40 CFR 63.607(b) a requirement that sources keep records that include a list of the affected source or equipment and actions taken to minimize emissions, an estimate of the volume of each regulated pollutant emitted over the applicable standard and a description of the method used to estimate the emissions. Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available or engineering judgment based on known process parameters. The EPA is proposing to require that sources keep records of this information to ensure that there is adequate information to allow the EPA to determine the severity of any failure to meet a standard, and to provide data that may document how the source met the general duty to minimize emissions when the source has failed to meet an applicable standard.

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(iv) in the General Provisions table (appendix A) by



changing the "yes" in column three to a "no." When applicable, the provision requires sources to record actions taken during SSM events when actions were inconsistent with their SSM plan. The requirement is no longer appropriate because SSM plans will no longer be required. The requirement previously applicable under 40 CFR 63.10(b)(2)(iv)(B) to record actions to minimize emissions and record corrective actions is now applicable by reference to 40 CFR 63.607.

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(v) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." When applicable, the provision requires sources to record actions taken during SSM events to show that actions taken were consistent with their SSM plan. The requirement is no longer appropriate because SSM plans will no longer be required.

We are proposing to revise the entry for 40 CFR 63.10(c)(15) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." The EPA is proposing that 40 CFR 63.10(c)(15) no longer apply. When applicable, the provision allows an owner or operator to use the affected source's SSM plan or records kept to satisfy the recordkeeping requirements of the SSM plan, specified in 40 CFR 63.6(e), to also satisfy the requirements of 40 CFR 63.10(c)(10) through (12). The EPA is proposing to eliminate this requirement

because SSM plans would no longer be required, and, therefore, 40 CFR 63.10(c)(15) no longer serves any useful purpose for affected units.

g. 40 CFR 63.607 Reporting

We are proposing to revise the entry for 40 CFR 63.10(d)(5) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.10(d)(5) describes the reporting requirements for startups, shutdowns and malfunctions. To replace the General Provisions reporting requirement, the EPA is proposing to add reporting requirements to 40 CFR 63.607. The replacement language differs from the General Provisions requirement in that it eliminates periodic SSM reports as a stand-alone report. We are proposing language that requires sources that fail to meet an applicable standard at any time to report the information concerning such events in the excess emission report already required under this rule. We are proposing that the report must contain the number, date, time, duration and the cause of such events (including unknown cause, if applicable), a list of the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions (e.g., product-loss calculations, mass balance calculations, direct measurements or engineering judgment based on known process parameters). The EPA is

proposing this requirement to ensure that adequate information is available to determine compliance, to allow the EPA to determine the severity of the failure to meet an applicable standard, and to provide data that may document how the source met the general duty to minimize emissions during a failure to meet an applicable standard.

The proposed rule eliminates the cross reference to 40 CFR 63.10(d)(5)(i) that contains the description of the previously-required SSM report format and submittal schedule from this section. These specifications are no longer necessary because the events will be reported in otherwise required reports with similar format and submittal requirements. We are proposing that owners or operators no longer be required to determine whether actions taken to correct a malfunction are consistent with an SSM plan because the plans would no longer be required.

We are proposing to revise the entry for 40 CFR 63.10(d)(5)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.10(d)(5)(ii) describes an immediate report for SSM when a source failed to meet an applicable standard but did not follow the SSM plan. We will no longer require owners and operators to report when actions taken during a startup, shutdown or malfunction were not consistent with an SSM plan because the plans would no longer be required.

### 3. Testing, Monitoring, Recordkeeping and Reporting

#### a. NESHAP Subpart AA

For wet scrubbers, we are proposing alternatives to the existing requirement to monitor pressure differential across the scrubber. We received input from industry that the pressure differential is not a reliable method of determining the performance of a scrubber because fouling occurs over time, increasing the pressure differential. The pressure differential immediately after cleaning will be much lower than that after the scrubber has operated for some time. Therefore, to provide flexibility, we have included several monitoring options, including pressure and temperature measurements, as alternatives to monitoring of scrubber differential pressure. We are also adding flexibility in the existing requirement to measure the flow rate of the scrubbing liquid to each scrubber (i.e., the inlet liquid flow rate to a scrubber). We are proposing that the inlet liquid-to-gas ratio may now be monitored in lieu of the inlet liquid flow rate, which provides the ability to lower liquid flow rate with changes in gas flow rate to the scrubber.

We are removing the requirement that facilities may not implement new operating parameter ranges until the Administrator has approved them, or 30 days have passed since submission of the performance test results. For the proposed requirements, facilities must immediately comply with new operating ranges

when they are developed and submitted. New operating ranges must also be established using the most recent performance test conducted by a facility, which allows for changes in control device operation to be appropriately reflected.

Because control devices may be necessary to meet the proposed Hg limits for phosphate rock calciners, we are proposing monitoring and testing requirements in subpart AA for the two types of control systems evaluated as alternatives for control of Hg: Adsorbers (typically fixed bed carbon), and sorbent injection (i.e., ACI) followed by a WESP or followed by fabric filtration. We are also proposing the addition of methods to monitor emissions of Hg using continuous emissions monitoring systems (CEMS).

As described in section IV.E.2.d of this preamble, for all processes, we have also modified the language for the conditions under which testing must be conducted to require that testing be conducted at maximum representative operating conditions for the process.

In keeping with the general provisions for continuous monitoring systems (CMS) (including CEMS and continuous parameter monitoring system (CPMS)), we are proposing the addition of a site-specific monitoring plan and calibration requirements for CMS. Provisions are also included for electronic reporting of stack test data.

We have also modified the format of the NESHAP to reference tables for emissions limits and monitoring requirements.

b. NSPS Subpart T

The EPA evaluated the monitoring and recordkeeping requirements currently required in NSPS subpart T to determine if they are adequate for determining compliance. Currently under NSPS subpart T, an owner or operator of a wet-process phosphoric acid plant is required to install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. However, the current rule does not require an owner or operator to establish, and demonstrate continuous compliance with, an allowable range for the pressure drop through the process scrubbing system. Therefore, we are proposing new monitoring and recordkeeping requirements for any wet-process phosphoric acid plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** to ensure continuous compliance with the standard.

We are proposing that for any wet-process phosphoric acid plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** the owner or operator establish an allowable range for the pressure drop through the process

scrubbing system. The allowable range would be established during the performance test required in 40 CFR 60.8. We also propose that the allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test. In addition, the owner or operator would be required to maintain the daily average pressure drop through the process scrubbing system within the allowable range; and valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average. We also propose that the owner or operator keep records of the daily average pressure drop through the process scrubbing system, and keep records of deviations. We are proposing these monitoring and recordkeeping requirements in order to: Ensure that the process scrubbing system is properly maintained over time; ensure continuous compliance with standards; and improve data accessibility.

Finally, for consistency with terminology used in the associated NESHAP subpart AA, we have changed the term "process scrubbing system" to "absorber."

We do not expect any costs associated with these proposed monitoring and recordkeeping requirements. These proposed requirements will only apply to new sources, and we are not aware of any planned new sources. Also, we believe that most, if not all, new sources will be exempt from NSPS subpart T

compliance due to the likelihood of the new source being subject to NESHAP subpart AA.

c. NSPS Subpart U

The EPA evaluated the monitoring and recordkeeping requirements currently required in NSPS subpart U to determine if they are adequate for determining compliance. Currently under NSPS subpart U, an owner or operator of a superphosphoric acid plant is required to install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. However, the current rule does not require an owner or operator to establish, and demonstrate continuous compliance with, an allowable range for the pressure drop through the process scrubbing system. Therefore, we are proposing new monitoring and recordkeeping requirements for any superphosphoric acid plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** to ensure continuous compliance with the standard.

We are proposing that for any superphosphoric acid plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** the owner or operator establish an allowable range for the pressure drop through the process scrubbing system. The



allowable range would be established during the performance test required in 40 CFR 60.8. We also propose that the allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test. In addition, the owner or operator would be required to maintain the daily average pressure drop through the process scrubbing system within the allowable range; and valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average. We also propose that the owner or operator keep records of the daily average pressure drop through the process scrubbing system, and keep records of deviations. We are proposing these monitoring and recordkeeping requirements in order to: ensure that the process scrubbing system is properly maintained over time; ensure continuous compliance with standards; and improve data accessibility.

Finally, for consistency with terminology used in the associated NESHAP subpart AA, we have changed the term "process scrubbing system" to "absorber."

We do not expect any costs associated with these proposed monitoring and recordkeeping requirements. These proposed requirements will only apply to new sources, and we are not aware of any planned new sources. Also, we believe that most, if not all, new sources will be exempt from NSPS subpart U

compliance due to the likelihood of the new source being subject to NESHAP subpart AA.

#### 4. Translation of Total F to HF Emission Limits

The EPA is proposing to translate the current total F limit (1b total F/ton  $P_2O_5$  feed) into an HF limit (1b HF/ ton  $P_2O_5$  feed). The current standard uses total F as a surrogate for HF, and as such, the standard allows for a scenario where 100 percent of all total F emissions could be HF. Therefore, we are proposing HF limits as the same numeric values as the current total F limits. We recognize that on a mass basis, HF emissions will be slightly greater than total F emissions; however, this relatively small difference of approximately 5 percent is negligible in measurement of the pollutant. Additionally, based on test data provided by industry, the EPA believes that moving to a form of the standard that requires HF to be measured, but retains the same numeric values as the current total F standards will be achievable by all facilities. We are proposing that sources would annually demonstrate compliance with the HF limit using EPA Method 320.

The resulting new and existing HF emission source limits are summarized in Table 6 of this preamble.

**Table 6: Summary of proposed HF emission limits for new and existing phosphoric acid facilities**

Regulated Process	Current Total F limits*		Proposed HF Limits*	
	Existing	New	Existing	New

WPPA Line	0.020	0.0135	0.020	0.0135
SPA Line	0.010	0.00870	0.010	0.00870

\* All limits expressed as lbs/ton P<sub>2</sub>O<sub>5</sub> feed.

With this proposal, we are seeking comment on finalizing the HF limit for regulating HF emissions using the target HAP (HF), instead of the long-standing surrogate for HF, total F. We invite comment on determining and setting a standard for HF in lieu of the existing total F standard. We solicit comment on our proposed decision.

We also seek comment on the use of EPA Method 320 for the compliance demonstration test method. Additionally, we solicit comment on the use of Fourier transform infrared spectroscopy (FTIR) HF CEMS as an optional continuous monitoring compliance approach within the rule. We also invite comment on the use of an HF emission standard where a source using an HF CEMS would comply with a 30-day rolling average emission limit, and annual relative accuracy test audit (RATA) certifications of CEMS. A technical memorandum, "Hydrogen Fluoride Continuous Emission Monitoring and Compliance Determination with EPA Method 320," in the Docket ID No. EPA-HQ-OAR-2012-0522 outlines technical detail on the use of HF CEMS and is provided as guidance for comments regarding details of a continuous HF monitoring option.

To allow facilities flexibility in demonstrating compliance, we are also considering an option to maintain the existing total F limits as an alternative addition to the

proposed HF limits. Facilities would be required to comply with all of the provisions in this proposed rulemaking, including the emission standards, and the operating, monitoring, notification, recordkeeping and reporting requirements; however, facilities would have the option to comply with either the proposed HF limits using EPA Method 320, or the current total F limits using EPA Method 13B. This option would be implemented by revising 40 CFR 63.602(a) and Tables 1, 1a, 2 and 2a to subpart AA to include both HF and total F limits; all other provisions would remain as proposed in subpart AA. We solicit comment on allowing facilities to demonstrate compliance with the current total F limits as an alternative to the proposed HF limits.

F. What are the notification, recordkeeping and reporting requirements for the Phosphoric Acid Manufacturing source category?

In this proposal, the EPA is describing a process to increase the ease and efficiency of submitting performance test data while improving data accessibility. Specifically, the EPA is proposing that owners and operators of phosphoric acid manufacturing facilities submit electronic copies of required performance test and performance evaluation reports by direct computer-to-computer electronic transfer using EPA-provided software. The direct computer-to-computer electronic transfer is accomplished through the EPA's Central Data Exchange (CDX) using

the Compliance and Emissions Data Reporting Interface (CEDRI). The CDX is the EPA's portal for submittal of electronic data. The EPA-provided software is called the Electronic Reporting Tool (ERT), which is used to generate electronic reports of performance tests and evaluations. The ERT generates an electronic report package that facilities will submit using CEDRI. The submitted report package will be stored in the CDX archive (the official copy of record) and the EPA's public database called WebFIRE. All stakeholders will have access to all reports and data in WebFIRE and accessing these reports and data will be very straightforward and easy (see the WebFIRE Report Search and Retrieval link at <http://cfpub.epa.gov/webfire/index.cfm?action=fire.searchERTSubmission>). A description and instructions for use of the ERT can be found at <http://www.epa.gov/ttn/chief/ert/index.html> and CEDRI can be accessed through the CDX Web site ([www.epa.gov/cdx](http://www.epa.gov/cdx)). A description of the WebFIRE database is available at: <http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main>.

The proposal to submit performance test data electronically to the EPA applies only to those performance tests and/or performance evaluations conducted using test methods that are supported by the ERT. The ERT supports most of the commonly used EPA reference test methods. A listing of the pollutants and test

methods supported by the ERT is available at:

<http://www.epa.gov/ttn/chief/ert/index.html>.

We believe that industry would benefit from this proposed approach to electronic data submittal. Specifically, by using this approach, industry will save time in the performance test submittal process. Additionally, the standardized format that the ERT uses allows sources to create a more complete test report, resulting in less time spent on backfilling data if a source failed to submit all required data elements. Also through this proposal, industry may only need to submit a report once to meet the requirements of the applicable subpart because stakeholders can readily access these reports from the WebFIRE database. This also benefits industry by reducing recordkeeping costs as the performance test reports that are submitted to the EPA using CEDRI are no longer required to be retained in hard copy, thereby, reducing staff time needed to coordinate these records.

Because the EPA will already have performance test data in hand, another benefit to industry of electronic reporting is that fewer or less substantial data collection requests in conjunction with prospective required residual risk assessments or technology reviews will be needed. This would result in a decrease in staff time needed to respond to data collection requests.

State, local and tribal air pollution control agencies may also benefit from having electronic versions of the reports they are now receiving. For example, state, local and tribal air pollution control agencies may be able to conduct a more streamlined and accurate review of electronic data submitted to them. For example, the ERT would allow for an electronic review process, rather than a manual data assessment, therefore, making their review and evaluation of the source-provided data and calculations easier and more efficient. In addition, the public stands to benefit from electronic reporting of emissions data because the electronic data will be easier for the public to access. The methods and procedures for collecting, accessing and reviewing air emissions data will be more transparent for all stakeholders.

One major advantage of the proposed submittal of performance test data through the ERT is a standardized method to compile and store much of the documentation required to be reported by this rule. The ERT clearly states the information required by the test method and ERT has the ability to house additional data elements that might be required by a delegated authority.

In addition, the EPA must have performance test data to conduct effective reviews of CAA sections 112 standards as well as for many other purposes including compliance determinations,

emission factor development and annual emission rate determinations. In conducting these required reviews, the EPA has found it ineffective and time consuming, not only for us, but also for regulatory agencies and source owners and operators, to locate, collect and submit performance test data. Also, in recent years, stack testing firms have typically collected performance test data in electronic format, making it possible to move to an electronic data submittal system that would increase the ease and efficiency of data submittal and improve data accessibility.

A common complaint heard from industry and regulators is that emission factors are outdated or not representative of a particular source category. With timely receipt and incorporation of data from most performance tests, the EPA would be able to ensure that emission factors, when updated, represent the most current range of operational practices. Finally, another benefit of the proposed electronic data submittal to WebFIRE is that these data would greatly improve the overall quality of existing and new emissions factors by supplementing the pool of emissions test data that the EPA evaluates to develop emissions factors.

In summary, in addition to supporting regulation development, control strategy development and other air pollution control activities, having an electronic database



populated with performance test data would save industry, state, local, tribal agencies and the EPA significant time, money and effort while also improving the quality of emission factors and inventories and air quality regulations.

G. What compliance dates are we proposing for the Phosphoric Acid Manufacturing source category?

We are proposing that facilities must comply with the proposed Hg limits for existing rock calciners no later than 3 years after the effective date of this rule. We are proposing a 3-year compliance lead time so that facilities with existing rock calciners have adequate time to design and install additional controls and demonstrate compliance, including the time necessary to: construct control devices; seek bids, select a vendor and install and test the new equipment; and purchase and install compliance monitoring equipment and implement quality assurance measures. We believe that three years are needed for facilities with existing rock calciners to complete the steps described above and achieve compliance with the proposed standards. For new rock calciners that commence construction or reconstruction after December 27, 1996, and on or before the effective date of this rule, we are proposing that facilities must comply with the proposed Hg limits no later than 1 year after the effective date of this rule. New rock calciners that commence construction or reconstruction after the effective

date of this rule would comply with the proposed Hg limits immediately upon startup. We are also proposing the compliance date for HF work practice standards for all (existing and new) rock calciners is the effective date of this rule. Based on the data that the EPA has received, all rock calciners are meeting the HF work practice standard; therefore, no additional time would be required to achieve compliance with this HF work practice standard. We specifically seek comment on the compliance dates proposed for regulating Hg and HF from new and existing phosphate rock calciners.

In addition, for existing gypsum dewatering stack or cooling ponds, we are proposing that facilities must prepare and comply with a gypsum dewatering stack and cooling pond management plan to control fugitive HF emissions no later than 1 year after the effective date of this rule. For new gypsum dewatering stack or cooling ponds, we are proposing that facilities must prepare and comply with a gypsum dewatering stack and cooling pond management plan to control fugitive HF emissions beginning on the effective date of this rule.

We are also proposing that for existing and new wet-process phosphoric acid process lines and superphosphoric acid process lines that commence construction or reconstruction on or before the effective date of this rule, the facility must comply with the proposed HF limits no later than 1 year after the effective

date of this rule. Facilities will continue to conduct the annual performance test, but will be required to use a different test method. Therefore, we are proposing a one-year compliance lead time so that facilities have adequate time to coordinate performance testing with the new test method. We do not anticipate that any facilities will need to install a new control device to meet the proposed HF limits. For new wet-process phosphoric acid process lines and superphosphoric acid process lines that commence construction or reconstruction after the effective date of this rule, the facility must comply with the proposed HF limits beginning on the effective date of this rule. Prior to these compliance dates (for HF limits), we are proposing that facilities continue to comply with the current total F standards.

We are also proposing that the compliance date for the amended SSM requirements is the effective date of this rule.

## **V. Analytical Results and Proposed Decisions for the Phosphate Fertilizer Production Source Category**

### **A. What are the results of the risk assessment and analyses for the Phosphate Fertilizer Production source category?**

The preamble sections below summarize the results of the risk assessments for the Phosphate Fertilizer Production source category. The complete risk assessment, Draft Residual Risk

Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing, is available in the docket for this action.

#### 1. Inhalation Risk Assessment Results

The basic chronic inhalation risk estimates presented here are the maximum individual lifetime cancer risk, the maximum chronic HI and the cancer incidence. We also present results from our acute inhalation impact screening in the form of maximum HQs, as well as the results of our preliminary screening for potential non-inhalation risks from PB-HAP. Also presented are the HAP "drivers," which are the HAP that collectively contribute 90 percent of the maximum cancer risk or maximum HI at the highest exposure location.

The inhalation risk results for this source category indicate that maximum lifetime individual cancer risks are less than 1-in-1 million. The total estimated cancer incidence from this source category is 0.001 excess cancer cases per year, or one excess case in every 1,000 years. The maximum chronic non-cancer TOSHI value for the source category could be up to 0.1 associated with emissions of manganese, indicating no significant potential for chronic non-cancer impacts.

We analyzed the potential differences between actual emissions levels and calculated the maximum emissions allowable under the MACT standards for every emission process group for this source category. Based upon the above analysis, we

multiplied the modeled actual risks for the MIR facility with site-specific process multipliers to estimate allowable risks under the MACT. We deemed this approach sufficient due to the low actual modeled risks for the source category. The maximum lifetime individual cancer risks based upon allowable emissions are still less than 1-in-1 million. The maximum chronic non-cancer TOSHI value is also estimated at an HI of 0.1.

## 2. Acute Risk Results

Worst-case acute HQs were calculated for every HAP that has an acute benchmark. There were no phosphate fertilizer production facilities identified with HQ values greater than 1.

## 3. Multipathway Risk Screening Results

For the Phosphate Fertilizer Production source category, the EPA conducted a Tier I screening-level evaluation of the potential human health risks associated with emissions of PB-HAP. The PB-HAP emitted by facilities in this category include Hg compounds (11 facilities), Pb compounds (11 facilities), and cadmium compounds (11 facilities). We compared reported emissions of PB-HAP to the Tier I screening emission thresholds established by the EPA for the purposes of the RTR risk assessments. One facility emitted  $\text{Hg}^{2+}$  above the Tier I screening threshold level, exceeding the screening threshold by a factor of 20. Consequently, we found it necessary to conduct a Tier II screening assessment.

For the Tier II screening assessment, we refined our  $\text{Hg}^{2+}$  analysis with additional site-specific information. The additional site-specific information included the land use around the facilities, the location of fishable lakes and local meteorological data such as wind direction. The result of this analysis was the development of a site-specific emission screening threshold for  $\text{Hg}^{2+}$ . This assessment uses the assumption that the biological productivity limitation of each lake is 1 gram of fish per acre of water, meaning that in order to fulfill the adult ingestion rate, the fisher will need to fish from 373 total acres of lakes. The result of this analysis was the development of a site-specific emission screening threshold for  $\text{Hg}^{2+}$ . We compared this Tier II screening threshold for  $\text{Hg}^{2+}$  to the facility's  $\text{Hg}^{2+}$  emissions. The facility's emissions exceeded the Tier II screening threshold, by a factor of 3.

To refine our Hg Tier II Screen for this facility, we first examined the set of lakes from which the angler ingested fish. Any lakes that appeared to not be fishable or publicly accessible were removed from the assessment, and the screening assessment was repeated. After we made the determination the three critical lakes were fishable, we analyzed the hourly meteorology data from which the Tier II meteorology statistics were derived. Using buoyancy and momentum equations from literature, and assumptions about facility fenceline boundaries,

we estimated by hour the height achieved by the emission plume before it moved laterally beyond the assumed fenceline. If the plume height was above the mixing height, we assumed there was no chemical exposure for that hour. The cumulative loss of chemical being released above the mixing height reduces the exposure and decreases the Tier II screening quotient. The refined Tier II analysis for mercury emissions indicated a 23-percent loss of emissions above mixing layer due to plume rise, this reduction still resulted in an angler screening non-cancer value equal to 2.

For this facility, after we performed the lake and plume rise analyses, we reran the relevant Tier II screening scenarios for the travelling subsistence angler in TRIM.FaTE with the same hourly meteorology data and hourly plume-rise adjustments from which the Tier II meteorology statistics were derived. The utilization of the time-series meteorology reduced the screening value further to a value of 0.6. For this source category our analysis indicated no potential for multipathway impacts of concern from this facility.

For the other PB-HAP emitted by facilities in the source category, no facilities emit cadmium above the Tier I screening threshold level. Lead is a PB-HAP, but the NAAQS value (which was used for the chronic noncancer risk assessment) takes into account multipathway exposures, so a separate multipathway

screening value was not developed. Since we did not estimate any exceedances of the NAAQS in our chronic noncancer risk assessment, we do not expect any significant multipathway exposure and risk due to Pb emissions from these facilities. For more information on the multipathway screening assessment conducted for this source category, see the memorandum, "Draft Residual Risk Assessment for Phosphate Fertilizer Production and Phosphoric Acid Manufacturing" provided in the docket for this rulemaking.

#### 4. Environmental Risk Screening Results

As described in section III.A.5 of this preamble, we conducted an environmental risk screening assessment for the Phosphate Fertilizer Production source category. In the Tier I screening analysis for PB-HAP (other than Pb, which was evaluated differently as noted in section III.A.5 of this preamble) none of the individual modeled concentrations for any facility in the source category exceeds any of the ecological benchmarks (either the LOAEL or NOAEL). Therefore, we did not conduct a Tier II assessment. For Pb, we did not estimate any exceedances of the secondary Pb NAAQS.

For acid gases, the average modeled concentration around each facility (i.e., the average concentration of all off-site data points in the modeling domain) did not exceed any ecological benchmark (either the LOAEL or NOAEL). HCl emissions



were not identified from the category. For HF, each individual concentration (i.e., each off-site data point in the modeling domain) was below the ecological benchmarks for all facilities. We did not identify an adverse environmental effect as defined in CAA section 112(a)(7) from HAP emissions from this source category.

### 5. Facility-wide Risk Results

The facility-wide MIR and TOSHI are based on emissions, as identified in the NEI, from all emissions sources at the identified facilities. The results of the facility-wide analysis indicate that all 11 facilities with phosphate fertilizer production have a facility-wide cancer MIR less than or equal to 1-in-1 million. The maximum facility-wide TOSHI for the source category is 0.2. The risk results are summarized in Table 7 of this preamble.

**Table 7. Human Health Risk Assessment for Phosphate Fertilizer Production**

Category & Number of Facilities Modeled	Cancer MIR (in 1 million)		Cancer Incidence (cases per year)	Population with risks of 1-in-1 million or more	Population with risks of 10-in-1 million or more	Max Chronic Non-cancer HI		Worst-case Max Acute Non-cancer HQ
	Based on Actual Emissions	Based on Allowable Emissions				Based on Actual Emissions	Based on Allowable Emissions	
Phosphate Fertilizer (11 facilities)	0.5	0.5	0.001	0	0	0.02	0.02	HQ <sub>REL</sub> = 0.4 (elemental Hg) HQ <sub>AEG</sub> -1 = 0.09 (hydrofluoric acid) —
Facility-wide (11 facilities)	0.5	0.5	0.001	0	0	0.2	0.3	—

### 6. What demographic groups might benefit from this regulation?

To determine whether or not to conduct a demographics analysis, we look at a combination of factors including the MIR, non-cancer TOSHI, population around the facilities in the source category, and other relevant factors. For the Phosphate Fertilizer Production source category, the MIR is less than 1-in-1 million, and the HI is less than 1 and, therefore, we did not conduct an assessment of risks to individual demographic groups for this rulemaking. However, we did conduct a proximity analysis, which identifies any overrepresentation of minority, low income or indigenous populations near facilities in the source category. The results of this analysis are presented in section IX.J of this preamble.

B. What are our proposed decisions regarding risk acceptability, ample margin of safety and adverse environmental effects for the Phosphate Fertilizer Production source category?

1. Risk Acceptability

The results of both the source category and facility-wide risk assessments indicate that all phosphate fertilizer production facilities have a cancer MIR less than 1-in-1 million. The maximum source category and facility-wide TOSHI are both less than 1, and the maximum worst-case acute non-cancer HQ is less than 1. We propose that the risks posed by emissions from this source category are acceptable.

2. Ample Margin of Safety Analysis and Proposed Controls

Under the ample margin of safety analysis, we evaluate the cost and feasibility of available control technologies and other measures (including the controls, measures and costs evaluated under the technology review) that could be applied in this source category to further reduce the risks due to emissions of HAP identified in our risk assessment, as well as the health impacts of such potential additional measures. As noted in our discussion of the technology review in section V.C of this preamble, no measures (beyond those already in place) were identified for reducing HAP emissions from the Phosphate Fertilizer source category. In addition, because our analyses show that the maximum baseline chronic cancer risk is below 1-in-1 million, the maximum chronic non-cancer HI is less than 1, and the worst-case acute HQ is less than the CA-REL, minimal reductions in risk could be achieved even if we identified measures that could reduce HAP emissions further. Based on the discussion above, we propose that the current standards provide an ample margin of safety to protect public health.

Though we did not identify any new technologies to reduce risk from this source category, we are specifically requesting comment on whether there are additional control measures that may be able to reduce risks from the source category. We request any information on potential emission reductions of such

measures, as well the cost and health impacts of such reductions to the extent they are known.

### 3. Adverse environmental effects

Based on the results of our environmental risk screening assessment, we conclude that there is not an adverse environmental effect as a result of HAP emissions from the Phosphate Fertilizer Production source category. We are proposing that it is not necessary to set a more stringent standard to prevent an adverse environmental effect, taking into consideration costs, energy, safety and other relevant factors.

### C. What are the results and proposed decisions based on our technology review for the Phosphate Fertilizer Production source category?

#### 1. NESHAP Technology Review

In order to fulfill our obligations under CAA section 112(d)(6), we conducted a technology review to identify new developments that may warrant revisions to the current NESHAP standards applicable to the Phosphate Fertilizer Production source category (i.e., NESHAP subpart BB). In conducting our technology review for the Phosphate Fertilizer Production source category, we utilized the RBLC database and the data submitted by facilities in response to the April 2010 CAA section 114 request.

Based on our review of the RBLC, we did not find any new developments in practices, processes and control technologies that have been applied since the original NESHAP to reduce emissions from phosphate fertilizer production plants.

Based on our review of the CAA section 114 data (see memorandum, "CAA Section 111(b)(1)(B) and 112(d)(6) Reviews for the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production Source Categories," which is available in Docket No. EPA-HQ-OAR-2012-0522), we determined that the control technologies used at phosphate fertilizer production plants have not changed since the EPA published the 1996 memorandum, "National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing and Phosphate Fertilizers Production; Proposed Rules - Draft Technical Support Document and Additional Technical Information," which is available in Docket ID No. A-94-02.

In general, the Phosphate Fertilizer Production source category continues to use wet scrubbing technology to control HF emissions from the APF processes. We did not identify any technical developments in wet scrubbing methods used at phosphate fertilizer production plants. As noted in the memorandum discussed above, the type and configuration of the wet scrubbing technology varies significantly between facilities and between process lines within a facility. In order to

determine the differences in effectiveness of control device technologies we identified, we reviewed the emissions data submitted by facilities in response to the April 2010 and January 2014 CAA section 114 requests.

For APF process lines, we identified four control technology configurations from the CAA section 114 data. However, based on the available emissions data, we could not distinguish one configuration that clearly achieved greater emissions reductions than the other configurations. The emissions data for the four configurations we identified cover a wide range of emissions and do not show that a particular configuration achieves greater emission reductions. We believe that observed differences in facility emissions are likely the result of factors other than control technology (e.g., subtle differences in sampling and analytical techniques, age of control equipment and differences in facility operation).

For TSP processes, none of the 11 facilities with APF processes have active operations for TSP production or storage based on the CAA section 114 responses. While one facility is permitted to store GTSP, we do not anticipate that the facility will resume GTSP operations at any point in the future because according to the International Fertilizer Industry Association, North American production of GTSP ceased in 2007. However, if a facility were to start producing and storing TSP, the control

technologies would be the same as those already used at APF process lines because the same, or very similar, equipment is used to produce and store TSP as what is used to produce and store APF (see the 1996 memorandum, "National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing and Phosphate Fertilizers Production; Proposed Rules - Draft Technical Support Document and Additional Technical Information," which is available in Docket ID No. A-94-02). Given the lack of TSP production in the U.S., and the lack of new control technologies for the similarly controlled APF process lines, no new technologies were identified during this review of TSP production and storage processes.

Therefore, neither these data nor any other information we have examined show that there has been a significant improvement in the add-on control technology or other equipment since promulgation of NESHAP subpart BB.

We also reviewed the CAA section 114 responses to identify any work practices, pollution prevention techniques and process changes at phosphate fertilizer production manufacturing plants that could achieve emission reductions. We did not identify any developments regarding practices, techniques, or process changes that affect point source emissions from this source category. See the memorandum, "CAA Section 111(b)(1)(B) and 112(d)(6) Reviews for the Phosphoric Acid Manufacturing and Phosphate

Fertilizer Production Source Categories," which is available in Docket ID No. EPA-HQ-OAR-2012-0522.

In light of the results of the technology review, we conclude that additional standards are not necessary pursuant to CAA section 112(d)(6) and we are not proposing changes to NESHAP subpart BB as part of our technology review. We solicit comment on our proposed decision.

## 2. NSPS Review

Pursuant to CAA section 111(b)(1)(B), we conducted a review to identify new developments that may advise revisions to the current NSPS standards applicable to the Phosphate Fertilizer Production source category (i.e., NSPS subparts V, W and X). This review considered both (1) whether developments in technology or other factors support the conclusion that a different system of emissions reduction has become the "best system of emissions reduction" and (2) whether emissions limitations and percent reductions beyond those required by the standards are achieved in practice.

### a. NSPS Subpart V Review

Based on a search of the RBLC database, CAA section 114 data, and other relevant sources, we did not find any new developments that have been applied since the original NSPS subpart V to reduce total F emissions from a DAP plant. Additionally, based on our review of the CAA section 114 data



provided by this industry, we determined that the technologies used to control stack emissions at DAP plants have not changed since the original NSPS subpart V. As discussed in more detail in the memorandum, "CAA Section 111(b)(1)(B) and 112(d)(6) Reviews for the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production Source Categories," which is available in Docket ID No. EPA-HQ-OAR-2012-0522, we observed some differences in total F emissions from DAP plants. However, we did not find any patterns in emissions reductions based on control technology used. Although we identified four control technology configurations that are being used at DAP plants, based on the available emissions data, we could not distinguish one configuration that clearly achieved greater emissions reductions than the other configurations. The emissions data for the four configurations we identified cover a wide range of emissions and do not show that a particular configuration achieves greater emission reductions. We believe that observed differences in facility total F emissions are likely the result of factors other than control technology (e.g., subtle differences in sampling and analytical techniques, age of control equipment and differences in facility operating parameters). Therefore, neither these data nor any other information we have examined show that there has been a significant improvement in the add-on control technology or other equipment since promulgation of NSPS

subpart V. Finally, we also reviewed the CAA section 114 responses to identify any work practices, pollution prevention techniques and process changes at DAP plants that could achieve greater emission reductions than is required under the current NSPS. We did not identify any developments regarding practices, techniques, or process changes that affect point source emissions from DAP plants. For these reasons, we do not see any basis for concluding that the "best system of emissions reduction" has changed.

Therefore, we are proposing that additional revisions to NSPS subpart V standards are not appropriate pursuant to CAA section 111(b)(1)(B). We solicit comment on our proposed determination.

#### b. NSPS Subparts W and X Reviews

As previously discussed in section V.C.1 of this preamble, none of the 11 facilities with APF processes have active operations for TSP production or storage based on the CAA section 114 responses. While one facility is permitted to store GTSP, we do not anticipate that the facility will resume GTSP operations at any point in the future because, according to the International Fertilizer Industry Association, North American production of GTSP ceased in 2007. However, if a facility were to start producing and storing TSP, the control technologies would be the same as those already used at APF process lines

because the same, or very similar, equipment is used to produce and store GTSP as what is used to produce and store APF (see the 1996 memorandum, "National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing and Phosphate Fertilizers Production; Proposed Rules - Draft Technical Support Document and Additional Technical Information," which is available in Docket ID No. A-94-02). Given the lack of TSP production in the U.S., and the lack of new developments for the similarly controlled APF process lines, no new developments were identified during this review of TSP production and storage processes. For these reasons, we do not see any basis for concluding that the "best system of emissions reduction" has changed.

Therefore, we are proposing that additional revisions to NSPS subpart W and subpart X standards are not appropriate pursuant to CAA section 111(b)(1)(B). We solicit comment on our proposed determination.

D. What other actions are we proposing for the Phosphate Fertilizer Production source category?

In addition to the amendments described above, we reviewed NESHAP subpart BB, NSPS subpart V, NSPS subpart W and NSPS subpart X to determine whether we should make additional amendments. From this review, we are proposing several additional revisions or clarifications. We are proposing

revisions to the SSM provisions of NESHAP subpart BB in order to ensure that they are consistent with the court decision in Sierra Club v. EPA, 551 F. 3d 1019 (D.C. Cir. 2008), which vacated two provisions that exempted sources from the requirement to comply with otherwise applicable CAA section 112(d) emission standards during periods of SSM. In addition, we are proposing clarifications to the applicability of NESHAP subpart BB. We also are proposing various other changes to testing, monitoring, recordkeeping and reporting requirements in NESHAP subpart BB, NSPS subpart V, NSPS subpart W and NSPS subpart X. Our analyses and proposed changes related to these issues are discussed in this section of this preamble.

#### 1. What are the SSM requirements?

The United States Court of Appeals for the District of Columbia Circuit vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM. Sierra Club v. EPA, 551 F.3d 1019 (D.C. Cir. 2008), cert. denied, 130 S. Ct. 1735 (U.S. 2010). Specifically, the court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1) holding that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature and that the SSM exemption violates the CAA's requirement that some CAA section 112 standards apply continuously.

We are proposing the elimination of the SSM exemption in this rule. Consistent with Sierra Club v. EPA, the EPA is proposing standards in this rule that apply at all times. We are also proposing several revisions to appendix A of subpart BB (the General Provisions Applicability Table) as is explained in more detail below. For example, we are proposing to eliminate the incorporation of the requirement in the General Provisions that the source develop an SSM plan. We also are proposing to eliminate and revise certain recordkeeping and reporting requirements related to the SSM exemption as further described below.

The EPA has attempted to ensure that the provisions we are proposing to eliminate are inappropriate, unnecessary or redundant in the absence of the SSM exemption. We are specifically seeking comment on whether we have successfully done so.

For the reasons explained below, we are proposing work practice standards for periods of startup and shutdown in lieu of numerical emission limits. CAA section 112(h)(1) states that the Administrator may promulgate a design, equipment or operational work practice standard in those cases where, in the judgment of the Administrator, it is not feasible to prescribe or enforce an emission standard. CAA section 112(h)(2)(B) further defines the term "not feasible" in this context to apply

when "the application of measurement technology to a particular class of sources is not practicable due to technological and economic limitations."

Startup and shutdown periods at phosphate fertilizer production facilities generally only last between 30 minutes to 6 hours. Because of the variability and the relatively short duration compared to the time needed to conduct a performance test, which typically requires a full working day, the EPA has determined that it is not feasible to prescribe a numerical emission standard for these periods. Furthermore, according to information provided by industry, it is possible that the feed rate (i.e., equivalent  $P_2O_5$  feed) can be zero during startup and shutdown periods. During these periods, it is not feasible to consistently enforce the emission standards that are expressed in terms of lb of pollutant/ton of feed.

Although we requested information on emissions and the operation of control devices during startup and shutdown periods in the CAA section 114 survey issued to the Phosphoric Fertilizer Production source category, we did not receive any emissions data collected during a startup and shutdown period, and we do not expect that these data exist. However, based on the information for control device operation received in the survey, we concluded that the control devices could be operated normally during periods of startup or shutdown. Also, we believe

that the emissions generated during startup and shutdown periods are lower than during steady-state conditions because the amount of feed materials introduced to the process during those periods is lower compared to normal operations. Therefore, if the emission control devices are operated during startup and shutdown, then HAP emissions will be the same or lower than during steady-state operating conditions.

Consequently, we are proposing a work practice standard rather than an emissions limit for periods of startup or shutdown. Control devices used on the various process lines in this source category are effective at achieving desired emission reductions immediately upon start-up. Therefore, during startup and shutdown periods, we are proposing that sources begin operation of any control device(s) in the production unit prior to introducing any feed into the production unit. We are also proposing that sources must continue operation of the control device(s) through the shutdown period until all feed material has been processed through the production unit.

Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead they are, by definition sudden, infrequent and not reasonably preventable failures of emissions control, process or monitoring equipment. The EPA interprets CAA section 112 as not

requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards. Under CAA section 112, emissions standards for new sources must be no less stringent than the level "achieved" by the best controlled similar source and for existing sources generally must be no less stringent than the average emission limitation "achieved" by the best-performing 12 percent of sources in the category. There is nothing in CAA section 112 that directs the EPA to consider malfunctions in determining the level "achieved" by the best performing sources when setting emission standards. As the United States Court of Appeals for the District of Columbia Circuit has recognized, the phrase "average emissions limitation achieved by the best performing 12 percent of" sources "says nothing about how the performance of the best units is to be calculated." Nat'l Ass'n of Clean Water Agencies v. EPA, 734 F.3d 1115, 1141 (D.C. Cir. 2013). While the EPA accounts for variability in setting emissions standards, nothing in section 112 requires the EPA to consider malfunctions as part of that analysis. A malfunction should not be treated in the same manner as the type of variation in performance that occurs during routine operations of a source. A malfunction is a failure of the source to perform in a "normal or usual manner" and no statutory language compels the EPA to consider such events in setting CAA section 112 standards.



Further, accounting for malfunctions in setting emission standards would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category and given the difficulties associated with predicting or accounting for the frequency, degree and duration of various malfunctions that might occur. For these reasons, the performance of units that are malfunctioning is not "reasonably" foreseeable. See, e.g., Sierra Club v. EPA, 167 F.3d 658, 662 (D.C. Cir. 1999) (the EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to "invest the resources to conduct the perfect study."). See also, Weyerhaeuser v. Costle, 590 F.2d 1011, 1058 (D.C. Cir. 1978) ("In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation."). In addition, emissions during a malfunction event can be significantly higher than emissions at any other time of source

operation. For example, if an air pollution control device with 99 percent removal goes off-line as a result of a malfunction (as might happen if, for example, the bags in a baghouse catch fire) and the emission unit is a steady state type unit that would take days to shut down, the source would go from 99-percent control to zero control until the control device was repaired. The source's emissions during the malfunction would be 100 times higher than during normal operations, and the emissions over a 4-day malfunction period would exceed the annual emissions of the source during normal operations. As this example illustrates, accounting for malfunctions could lead to standards that are not reflective of (and significantly less stringent than) levels that are achieved by a well-performing non-malfunctioning source. It is reasonable to interpret CAA section 112 to avoid such a result. The EPA's approach to malfunctions is consistent with CAA section 112 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 112 standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good-faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The

EPA would also consider whether the source's failure to comply with the CAA section 112 standard was, in fact, "sudden, infrequent, not reasonably preventable" and was not instead "caused in part by poor maintenance or careless operation" 40 CFR 63.2 (definition of malfunction).

If the EPA determines in a particular case that enforcement action against a source for violation of an emission standard is warranted, the source can raise any and all defenses in that enforcement action and the federal district court will determine what, if any, relief is appropriate. The same is true for citizen enforcement actions. Similarly, the presiding officer in an administrative proceeding can consider any defense raised and determine whether administrative penalties are appropriate.

In summary, the EPA interpretation of the CAA and, in particular, CAA section 112, is reasonable and encourages practices that will avoid malfunctions. Administrative and judicial procedures for addressing exceedances of the standards fully recognize that violations may occur despite good faith efforts to comply and can accommodate those situations.

In several prior CAA section 112 rules, the EPA had included an affirmative defense to civil penalties for violations caused by malfunctions in an effort to create a system that incorporates some flexibility, recognizing that there is a tension, inherent in many types of air regulation, to

ensure adequate compliance while simultaneously recognizing that despite the most diligent of efforts, emission standards may be violated under circumstances entirely beyond the control of the source. Although the EPA recognized that its case-by-case enforcement discretion provides sufficient flexibility in these circumstances, it included the affirmative defense to provide a more formalized approach and more regulatory clarity. See Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1057-58 (D.C. Cir. 1978) (holding that an informal case-by-case enforcement discretion approach is adequate); but see Marathon Oil Co. v. EPA, 564 F.2d 1253, 1272-73 (9th Cir. 1977) (requiring a more formalized approach to consideration of "upsets beyond the control of the permit holder."). Under the EPA's regulatory affirmative defense provisions, if a source could demonstrate in a judicial or administrative proceeding that it had met the requirements of the affirmative defense in the regulation, civil penalties would not be assessed. Recently, the United States Court of Appeals for the District of Columbia Circuit vacated an affirmative defense in one of the EPA's CAA section 112 regulations. NRDC v. EPA, 749 F.3d 1055 (D.C. Cir., 2014) (vacating affirmative defense provisions in CAA section 112 rule establishing emission standards for Portland cement kilns). The court found that the EPA lacked authority to establish an affirmative defense for private civil suits and held that under

the CAA, the authority to determine civil penalty amounts in such cases lies exclusively with the courts, not the EPA. Specifically, the court found: "As the language of the statute makes clear, the courts determine, on a case-by-case basis, whether civil penalties are 'appropriate.'" See *NRDC*, 2014 U.S. App. LEXIS 7281 at \*21 ("[U]nder this statute, deciding whether penalties are 'appropriate' in a given private civil suit is a job for the courts, not EPA.").<sup>30</sup> In light of *NRDC*, the EPA is not including a regulatory affirmative defense provision in the proposed rule. As explained above, if a source is unable to comply with emissions standards as a result of a malfunction, the EPA may use its case-by-case enforcement discretion to provide flexibility, as appropriate. Further, as the United States Court of Appeals for the District of Columbia Circuit recognized, in an EPA or citizen enforcement action, the court has the discretion to consider any defense raised and determine whether penalties are appropriate. Cf. *NRDC*, 2014 U.S. App. LEXIS 7281 at \*24 (arguments that violation were caused by unavoidable technology failure can be made to the courts in future civil cases when the issue arises). The same is true for

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<sup>30</sup> The court's reasoning in *NRDC* focuses on civil judicial actions. The court noted that "EPA's ability to determine whether penalties should be assessed for Clean Air Act violations extends only to administrative penalties, not to civil penalties imposed by a court." *Id.*

the presiding officer in EPA administrative enforcement actions.<sup>31</sup>

a. 40 CFR 63.628(b) General Duty

We are proposing to revise the entry for 40 CFR 63.6(e)(1)(i) and (e)(1)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.6(e)(1)(i) describes the general duty to minimize emissions. Some of the language in that section is no longer necessary or appropriate in light of the elimination of the SSM exemption. We are proposing instead to add general duty regulatory text at 40 CFR 63.628(b) that reflects the general duty to minimize emissions while eliminating the reference to periods covered by an SSM exemption. The current language in 40 CFR 63.6(e)(1)(i) characterizes what the general duty entails during periods of SSM. With the elimination of the SSM exemption, there is no need to differentiate between normal operations, startup and shutdown and malfunction events in describing the general duty. Therefore, the language the EPA is proposing does not include that language from 40 CFR 63.6(e)(1). We are also proposing to revise the entry for 40 CFR

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<sup>31</sup> Although the *NRDC* case does not address the EPA's authority to establish an affirmative defense to penalties that is available in administrative enforcement actions, EPA is not including such an affirmative defense in the proposed rule. As explained above, such an affirmative defense is not necessary. Moreover, assessment of penalties for violations caused by malfunctions in administrative proceedings and judicial proceedings should be consistent. CF. CAA section 113(e) (requiring both the Administrator and the court to take specified criteria into account when assessing penalties).

63.6(e)(1)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section

63.6(e)(1)(ii) imposes requirements that are not necessary with the elimination of the SSM exemption or are redundant of the general duty requirement being added at 40 CFR 63.628(b).

b. SSM Plan

We are proposing to revise the entry for 40 CFR 63.6(e)(3) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Generally, these paragraphs require development of an SSM plan and specify SSM recordkeeping and reporting requirements related to the SSM plan. As noted, the EPA is proposing to remove the SSM exemptions. Therefore, affected units will be subject to an emission standard during such events. The applicability of a standard during such events will ensure that sources have ample incentive to plan for and achieve compliance and thus the SSM plan requirements are no longer necessary.

c. Compliance with Standards

We are proposing to revise the entry for 40 CFR 63.6(f) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." The current language of 40 CFR 63.6(f)(1) exempts sources from non-opacity standards during periods of SSM. As discussed above, the court in Sierra Club vacated the exemptions contained in this provision and held that the CAA

requires that some CAA section 112 standard apply continuously. Consistent with Sierra Club, the EPA is proposing to revise standards in this rule to apply at all times.

d. 40 CFR 63.626 Performance Testing

We are proposing to revise the entry for 40 CFR 63.7(e)(1) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.7(e)(1) describes performance testing requirements. The EPA is instead proposing to add a performance testing requirement at 40 CFR 63.626(d). The performance testing requirements we are proposing to add differ from the General Provisions performance testing provisions in several respects. The proposed regulatory text does not allow testing during startup, shutdown, or malfunction. The proposed regulatory does not include the language in 40 CFR 63.7(e)(1) that restated the SSM exemption and language that precluded startup and shutdown periods from being considered "representative" for purposes of performance testing. Furthermore, as in 40 CFR 63.7(e)(1), performance tests conducted under this subpart should not be conducted during malfunctions because conditions during malfunctions are often not representative of operating conditions.

We are proposing that sources conduct performance tests during "maximum representative operating conditions for the process". Specifically, we are proposing that sources must



operate their process during the performance test in such a way that results in the flue gas characteristics that are the most difficult for reducing emissions of the regulated pollutant(s) by the control device used. In an effort to provide more flexibility to owners and operators regarding the identification of the proper testing conditions, the most difficult condition for the control device may include, but is not limited to, the highest HAP mass loading rate to the control device, or the highest HAP mass loading rate of constituents that approach the limits of solubility for scrubbing media. The EPA understands that there may be cases where efficiencies are dependent on other characteristics of emission streams, including the characteristics of components and the operating principles of the devices. For example, the solubility of emission stream components in scrubbing media, or emission stream component affinity in carbon adsorption systems can also define the most difficult condition for a particular control device. The EPA is also proposing to add language that requires the owner or operator to record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent maximum representative operating conditions. Section 63.7(e) requires that the owner or operator make available to the Administrator upon request such records "as may be necessary

to determine the condition of the performance test," but did not specifically require the owner or operator to record the information. The regulatory text the EPA is proposing to add builds on that requirement and makes explicit the requirement to record the information.

e. Monitoring

We are proposing to revise the entry for 40 CFR 63.8(c)(1)(i) and (c)(1)(iii) in the General Provisions table by changing the "yes" in column three to a "no." The cross-references to the general duty and SSM plan requirements in those subparagraphs are not necessary in light of other requirements of 40 CFR 63.8 that require good air pollution control practices (40 CFR 63.8(c)(1)) and that set out the requirements of a quality control program for monitoring equipment (40 CFR 63.8(d)).

We are proposing to revise the entry for 40 CFR 63.8(d)(3) in the General Provisions table by changing the "yes" in column three to a "no." The final sentence in 40 CFR 63.8(d)(3) refers to the General Provisions' SSM plan requirement, which is no longer applicable. The EPA is proposing to add to the rule at 40 CFR 63.628(c) text that is identical to 40 CFR 63.8(d)(3), except that the final sentence is replaced with the following sentence: "You must include the program of corrective action required under §63.8(d)(2) in the plan."

f. 40 CFR 63.627 Recordkeeping

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(i) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.10(b)(2)(i) describes the recordkeeping requirements during startup and shutdown. These recording provisions are no longer necessary because the EPA is proposing that recordkeeping and reporting applicable to normal operations will apply to startup and shutdown. In the absence of special provisions applicable to startup and shutdown, such as a startup and shutdown plan, there is no reason to retain additional recordkeeping for startup and shutdown periods.

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.10(b)(2)(ii) describes the recordkeeping requirements during a malfunction. The EPA is proposing to add such requirements to 40 CFR 63.627(b). The regulatory text we are proposing to add differs from the General Provisions it is replacing in that the General Provisions requires the creation and retention of a record of the occurrence and duration of each malfunction of process, air pollution control and monitoring equipment. The EPA is proposing that this requirement apply to any failure to meet an applicable standard and is requiring that the source record

the date, time and duration of the failure rather than the "occurrence." The EPA is also proposing to add to 40 CFR 63.627 a requirement that sources keep records that include a list of the affected source or equipment and actions taken to minimize emissions, an estimate of the volume of each regulated pollutant emitted over the applicable standard, and a description of the method used to estimate the emissions. Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available or engineering judgment based on known process parameters. The EPA is proposing to require that sources keep records of this information to ensure that there is adequate information to allow the EPA to determine the severity of any failure to meet a standard, and to provide data that may document how the source met the general duty to minimize emissions when the source has failed to meet an applicable standard.

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(iv) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." When applicable, the provision requires sources to record actions taken during SSM events when actions were inconsistent with their SSM plan. The requirement is no longer appropriate because SSM plans will no longer be required. The requirement previously applicable under 40 CFR 63.10(b)(2)(iv)(B) to record actions to minimize

emissions and record corrective actions is now applicable by reference to 40 CFR 63.627.

We are proposing to revise the entry for 40 CFR 63.10(b)(2)(v) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." When applicable, the provision requires sources to record actions taken during SSM events to show that actions taken were consistent with their SSM plan. The requirement is no longer appropriate because SSM plans will no longer be required.

We are proposing to revise the entry for 40 CFR 63.10(c)(15) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." The EPA is proposing that 40 CFR 63.10(c)(15) no longer apply. When applicable, the provision allows an owner or operator to use the affected source's SSM plan or records kept to satisfy the recordkeeping requirements of the SSM plan, specified in 40 CFR 63.6(e), to also satisfy the requirements of 40 CFR 63.10(c)(10) through (12). The EPA is proposing to eliminate this requirement because SSM plans would no longer be required, and, therefore, 40 CFR 63.10(c)(15) no longer serves any useful purpose for affected units.

g. 40 CFR 63.627 Reporting

We are proposing to revise the entry for 40 CFR 63.10(d)(5) in the General Provisions table (appendix A) by changing the

"yes" in column three to a "no." Section 63.10(d)(5) describes the reporting requirements for SSM. To replace the General Provisions reporting requirement, the EPA is proposing to add reporting requirements to 40 CFR 63.627. The replacement language differs from the General Provisions requirement in that it eliminates periodic SSM reports as a stand-alone report. We are proposing language that requires sources that fail to meet an applicable standard at any time to report the information concerning such events in the excess emission report, already required under this rule. We are proposing that the report must contain the number, date, time, duration and the cause of such events (including unknown cause, if applicable), a list of the affected source or equipment, an estimate of the volume of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions (e.g., product-loss calculations, mass balance calculations, direct measurements, or engineering judgment based on known process parameters). The EPA is proposing this requirement to ensure that adequate information is available to determine compliance, to allow the EPA to determine the severity of the failure to meet an applicable standard, and to provide data that may document how the source met the general duty to minimize emissions during a failure to meet an applicable standard.

The proposed rule eliminates the cross reference to 40 CFR 63.10(d)(5)(i) that contains the description of the previously-required SSM report format and submittal schedule from this section. These specifications are no longer necessary because the events will be reported in otherwise required reports with similar format and submittal requirements. We are proposing that owners or operators no longer be required to determine whether actions taken to correct a malfunction are consistent with an SSM plan because the plans would no longer be required.

We are proposing to revise the entry for 40 CFR 63.10(d)(5)(ii) in the General Provisions table (appendix A) by changing the "yes" in column three to a "no." Section 63.10(d)(5)(ii) describes an immediate report for SSM when a source failed to meet an applicable standard but did not follow the SSM plan. We will no longer require owners and operators to report when actions taken during a startup, shutdown or malfunction were not consistent with an SSM plan, because the plans would no longer be required.

## 2. Clarifications to Applicability and Certain Definitions

### a. NESHAP Subpart BB

We are proposing clarifications to the applicability section (40 CFR 63.620) of the Phosphate Fertilizer Production NESHAP (subpart BB). The requirements of the current Phosphate Fertilizer Production NESHAP (subpart BB) apply to diammonium

and/or monoammonium phosphate process lines, granular triple superphosphate lines and granular triple superphosphate storage buildings only. In this action, we are proposing clarifications to the applicability of the NESHAP to include any process line that produces a reaction product of ammonia and phosphoric acid. Based on facility responses to the CAA section 114 survey issued to the Phosphate Fertilizer Production source category, EPA learned that the phosphate fertilizer products produced by facilities changes over time (e.g., no facility currently produces a granular triple superphosphate product). To ensure the emission standards we are proposing reflect inclusion of HAP emissions from all sources in the defined source category, as initially intended in the rule promulgation, we believe it necessary to clarify the applicability of the NESHAP to include reaction products of ammonia and phosphoric acid, and not just diammonium and monoammonium phosphate. This revision also further aligns the definition of the source category with the current provisions in 40 CFR 63.620(a) which specify that the NESHAP applies to each phosphate fertilizers production plant.

Granular triple superphosphate is no longer produced in the United States. However, in the unlikely event that a facility were to start producing and storing GTSP, we are not proposing to remove requirements for the triple superphosphate processes



regulated by NESHAP subpart BB (i.e., GTSP process lines and storage buildings).

For consistency between NESHAP subpart AA and NESHAP subpart BB, we are proposing the NESHAP subpart AA conditions that exclude the use of evaporative cooling towers for any liquid effluent from any wet scrubbing device installed to control HF emissions from process equipment also be included in NESHAP subpart BB. For additional consistency between NESHAP subpart AA and NESHAP subpart BB, we are also proposing to amend the definitions of diammonium and/or monoammonium phosphate process line, granular triple superphosphate process line and granular triple superphosphate storage building to include relevant emission points, and to remove text from the applicability section that is duplicative of the revised definitions.

b. NSPS Subpart W

We are proposing to change the word "cookers" as listed in 40 CFR 60.230(a) to "coolers" in order to correct the typographical error. The term should be "coolers," and background literature does not indicate any equipment referred to "cookers" being used in the manufacture of TSP.

3. Testing, monitoring, recordkeeping and reporting

a. NESHAP Subpart BB

For wet scrubbers, we are proposing alternatives to the existing requirement to monitor pressure differential through the scrubber. We received input from industry that the pressure differential is not a reliable method of determining the performance of a column because fouling occurs over time, increasing the pressure differential. The pressure differential immediately after cleaning will be much lower than that after the scrubber has operated for some time. Therefore, to provide flexibility, we have included a number of monitoring options as alternatives to determining the performance of a column using pressure differential. We are also adding flexibility in the existing requirement to measure the flow rate of the scrubbing liquid to each scrubber (i.e., the inlet liquid flow rate to a scrubber). We are proposing that the inlet liquid-to-gas ratio may now be monitored in lieu of the inlet liquid flow rate, which provides the ability to lower liquid flow rate with changes in gas flow rate to the scrubber.

We are removing the requirement that facilities may not implement new operating parameter ranges until the Administrator has approved them, or 30 days have passed since submission of the performance test results. For the proposed requirements, facilities must immediately comply with new operating ranges when they are developed and submitted. New operating ranges must also be established using the most recent performance test

conducted by a facility, which allows for changes in control device operation to be appropriately reflected.

As described in section V.D.1.d of this preamble, we have also modified the language for the conditions under which testing must be conducted to require that testing be conducted at maximum representative operating conditions for the process.

For subpart BB we are proposing monitoring requirements for fabric filters because two processes were identified that used fabric filters rather than wet scrubbing as the control technology.

In keeping with the general provisions for CMS (including CEMS and CPMS), we are proposing the addition of a site-specific monitoring plan and calibration requirements for CMS. Provisions are included for electronic reporting of stack test data.

We have also modified the format of the NESHAP to reference tables for emissions limits and monitoring requirements.

#### b. NSPS Subpart V

The EPA evaluated the monitoring and recordkeeping requirements currently required in NSPS subpart V to determine if they are adequate for determining compliance. Currently under NSPS subpart V, an owner or operator of a granular diammonium phosphate plant is required to install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process

scrubbing system. However, the current rule does not require an owner or operator to establish, and demonstrate continuous compliance with, an allowable range for the pressure drop through the process scrubbing system. Therefore, we are proposing new monitoring and recordkeeping requirements for any diammonium phosphate plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** to ensure continuous compliance with the standard.

We are proposing that for any granular diammonium phosphate plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** the owner or operator establish an allowable range for the pressure drop through the process scrubbing system. The allowable range would be established during the performance test required in 40 CFR 60.8. We also propose that the allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test. In addition, the owner or operator would be required to maintain the daily average pressure drop through the process scrubbing system within the allowable range; and valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average. We also propose that the owner or operator keep records of the daily

average pressure drop through the process scrubbing system, and keep records of deviations. We are proposing these monitoring and recordkeeping requirements in order to: Ensure that the process scrubbing system is properly maintained over time; ensure continuous compliance with standards; and improve data accessibility.

Finally, for consistency with terminology used in the associated NESHAP subpart BB, we have changed the term "process scrubbing system" to "absorber".

We do not expect any costs to be associated with these proposed monitoring and recordkeeping requirements. These proposed requirements will apply to all diammonium phosphate plants that reconstruct or modify their plants; however, facilities that are subject to the NESHAP are exempt from compliance with the NSPS. We are aware of only one facility currently subject to the NSPS, but not the NESHAP. We do not anticipate that this facility will modify their diammonium phosphate plant over the next 3 years; therefore, this facility will not trigger the proposed monitoring and recordkeeping requirements for NSPS subpart V. Furthermore, pursuant to their Title V air permit compliance assurance monitoring plan, this facility already conducts daily monitoring of pressure drop through their process scrubbing system and compares it against an established range. Therefore, any costs to comply with these

requirements would be negligible should the facility become subject.

c. NSPS Subpart W

The EPA evaluated the monitoring and recordkeeping requirements currently required in NSPS subpart W to determine if they are adequate for determining compliance. Currently under NSPS subpart W, an owner or operator of a triple superphosphate plant is required to install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. However, the current rule does not require an owner or operator to establish, and demonstrate continuous compliance with, an allowable range for the pressure drop through the process scrubbing system. Therefore, we are proposing new monitoring and recordkeeping requirements for any triple superphosphate plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** to ensure continuous compliance with the standard.

We are proposing that for any triple superphosphate plant that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** the owner or operator establish an allowable range for the pressure drop through the process scrubbing system. The

allowable range would be established during the performance test required in 40 CFR 60.8. We also propose that the allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test. In addition, the owner or operator would be required to maintain the daily average pressure drop through the process scrubbing system within the allowable range; and valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average. We also propose that the owner or operator keep records of the daily average pressure drop through the process scrubbing system, and keep records of deviations. We are proposing these monitoring and recordkeeping requirements in order to: ensure that the process scrubbing system is properly maintained over time; ensure continuous compliance with standards; and improve data accessibility.

Finally, for consistency with terminology used in the associated NESHAP subpart BB, we have changed the term "process scrubbing system" to "absorber."

We do not expect any costs associated with these proposed monitoring and recordkeeping requirements, as we are not aware of any facilities in the United States that manufacture TSP or that plan to manufacture TSP in the next three years.

d. NSPS Subpart X

The EPA evaluated the monitoring and recordkeeping requirements currently required in NSPS subpart X to determine if they are adequate for determining compliance. Currently under NSPS subpart X, an owner or operator of a granular triple superphosphate storage facility is required to install, calibrate, maintain and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. However, the current rule does not require an owner or operator to establish, and demonstrate continuous compliance with, an allowable range for the pressure drop through the process scrubbing system. Therefore, we are proposing new monitoring and recordkeeping requirements for any granular triple superphosphate storage facility that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** to ensure continuous compliance with the standard.

We are proposing that for any granular triple superphosphate storage facility that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** the owner or operator establish an allowable range for the pressure drop through the process scrubbing system. The allowable range would be established during the performance test required in 40 CFR 60.8.



We also propose that the allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test. In addition, the owner or operator would be required to maintain the daily average pressure drop through the process scrubbing system within the allowable range; and valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average. We also propose that the owner or operator keep records of the daily average pressure drop through the process scrubbing system, and keep records of deviations. We are proposing these monitoring and recordkeeping requirements in order to: Ensure that the process scrubbing system is properly maintained over time; ensure continuous compliance with standards; and improve data accessibility.

Finally, for consistency with terminology used in the associated NESHAP subpart BB, we have changed the term "process scrubbing system" to "absorber."

We do not expect any costs associated with these proposed monitoring and recordkeeping requirements as we are not aware of any facilities that manufacture or store GTSP or plan to manufacture or store GTSP in the next 3 years.

#### 4. Translation of TF to HF Emission Limits

As described in section IV.E.4 of this preamble, the EPA is proposing to translate the current total F limit (lbs total

F/ton P<sub>2</sub>O<sub>5</sub> feed) into an HF limit (lbs HF/ton P<sub>2</sub>O<sub>5</sub> feed). Please refer to section IV.E.4 of this preamble for a detailed description of the methodology used to translate the existing TF limits to HF limits.

The resulting new and existing proposed HF emission limits are summarized in Table 8 of this preamble:

**Table 8: Summary of proposed HF emission limits for new and existing phosphate fertilizer facilities**

Regulated Process	Current Total F limits*		Proposed HF Limits*	
	Existing	New	Existing	New
MAP/DAP Fertilizer Lines	0.060	0.0580	0.060	0.0580
GTSP Process Line	0.150	0.1230	0.150	0.1230
GTSP Storage Building	5.0×10 <sup>-4</sup>	5.0×10 <sup>-4</sup>	5.0×10 <sup>-4</sup>	5.0×10 <sup>-4</sup>

\* All limits expressed as lbs/Ton P<sub>2</sub>O<sub>5</sub> feed

Also, as discussed in section IV.E.4 of this preamble, we are seeking comment on finalizing HF limits for regulating HF rather than total F, the use of EPA Method 320 for the compliance demonstration test method, the use of FTIR HF CEMS as an optional continuous monitoring compliance approach within the rule, the use of an HF CEMS as a compliance option and reduced testing frequency for HF monitoring. A more detailed discussion of these requests for comments is provided in section IV.E.4 of this preamble.

E. What are the notification, recordkeeping and reporting requirements for the Phosphate Fertilizer Production source category?

For the Phosphate Fertilizer Production source category, we are proposing the same electronic reporting requirements described in section IV.F of this preamble.

F. What compliance dates are we proposing for the Phosphate Fertilizer Production source category?

We are proposing that for existing and new process lines that produce a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process lines), granular triple superphosphate process lines and granular triple superphosphate storage buildings that commence construction or reconstruction on or before the effective date of this rule, the facility must comply with the proposed HF limits no later than 1 year after the effective date of this rule. Facilities will continue to conduct the annual performance test, but will be required to use a different test method. Therefore, we are proposing a 1-year compliance lead time so that facilities have adequate time to coordinate performance testing with the new test method. We do not anticipate that any facilities will need to install a new control device to meet the proposed HF limits. For new process lines that produce a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process lines), granular triple superphosphate process lines and granular triple superphosphate storage buildings that commence construction or reconstruction after the effective date

of this rule, the facility must comply with the proposed HF limits beginning on the effective date of this rule. Prior to these compliance dates (for HF limits), we are proposing that facilities continue to comply with the current total F standards.

We are proposing that the SSM requirements compliance date is the effective date of this rule.

## **VI. Summary of Cost, Environmental and Economic Impacts**

### **A. What are the affected sources?**

We anticipate that the 13 facilities currently operating in the United States will be affected by these proposed amendments. One of the 13 facilities has indicated to the EPA that it plans on closing the phosphoric acid and phosphate fertilizer processes when the gypsum dewatering stack in use reaches the end of its capacity to accept gypsum slurry. We do not expect any new facilities to be constructed or expanded in the foreseeable future.

### **B. What are the air quality impacts?**

We have estimated the potential emissions reductions that may be realized from the implementation of the proposed emission standards for the Phosphoric Acid Manufacturing and Phosphate Fertilizer Production source categories. We estimated emission reductions by first calculating emissions at the current level of control for each facility (referred to as the baseline level

of control), and at the proposed level of control (i.e., the proposed beyond-the-floor emission standard for Hg from phosphate rock calciners). We calculated emission reductions as the difference between the proposed level and baseline level of control. We estimate that the proposed subpart AA NESHAP will result in emissions reductions of approximately 145 lb per year of Hg from phosphate rock calciners as a result of beyond-the-floor emission standards for Hg. The current estimated Hg emissions from the phosphate rock calciners is approximately 169 lb per year. The memorandum, "Beyond-the-Floor Analysis for Phosphate Rock Calciners at Phosphoric Acid Manufacturing Plants," which is available in the docket for this action, documents the results of the beyond-the-floor analysis.

C. What are the cost impacts?

We have estimated compliance costs for all existing sources to add the necessary controls and monitoring devices, perform inspections, recordkeeping and reporting requirements to comply with the proposed rule. Based on this analysis, we anticipate an overall total capital investment of \$4.9 million, with an associated total annualized cost of approximately \$2.0 million (using a discount rate of 7 percent), in 2013 dollars. We do not anticipate the construction of any new phosphoric acid manufacturing plants or phosphate fertilizer production

facilities in the next 5 years. Therefore, there are no new source cost impacts.

We calculated costs to meet the proposed level of control. For phosphate rock calciners, we estimated the cost of adding a fixed-bed carbon adsorption system to meet the proposed Hg emission standard. For all other emission sources, including phosphate rock calciners, we calculated capital and annual costs for testing, monitoring, recordkeeping and reporting. The memorandum, "Control Costs and Emissions Reductions for Phosphoric Acid and Phosphate Fertilizer Production Source Categories," which is available in the docket for this action, documents the control cost analyses.

D. What are the economic impacts?

Economic impact analyses focus on changes in market prices and output levels. If changes in market prices and output levels in the primary markets are significant enough, we also examine impacts on other markets. Both the magnitude of costs needed to comply with the rule and the distribution of these costs among affected facilities can have a role in determining how the market will change in response to the rule. We estimated the total annualized costs for the proposed rule to be \$2.0 million. We project that only one facility will incur significant costs. A global agrochemical company with annual revenue estimated in the \$100 million to \$500 million range owns this facility. The

facility itself would not be a small business even if it were not owned by the larger entity. The annualized control costs for this company would be 0.3 percent to 1.5 of percent revenues. We do not expect these small costs to result in a significant market impact whether they are passed on to the consumer or absorbed by the company.

Because no small firms will incur control costs, there is no significant impact on small entities. Thus, we do not expect this regulation to have a significant impact on a substantial number of small entities.

E. What are the benefits?

We anticipate this rulemaking to reduce Hg emissions by approximately 145 lb each year starting in 2016. These avoided emissions will result in improvements in air quality and reduced negative health effects associated with exposure to air pollution of these emissions; however, we have not quantified or monetized the benefits of reducing these emissions for this rulemaking because the estimated costs for this action are less than \$100 million.

**VII. Request for Comments**

We solicit comments on all aspects of this proposed action. In addition to general comments on this proposed action, we are also interested in additional data that may improve the risk assessments and other analyses. We are specifically interested

in receiving any improvements to the data used in the site-specific emissions profiles used for risk modeling, including information on the appropriate acute emissions factors for estimating emissions from the gypsum dewatering stacks and cooling ponds. Such data should include supporting documentation in sufficient detail to allow characterization of the quality and representativeness of the data or information. Section VIII of this preamble provides more information on submitting data.

#### **VIII. Submitting Data Corrections**

The site-specific emissions profiles used in the source category risk and demographic analyses and instructions are available for download on the RTR Web page at:

<http://www.epa.gov/ttn/atw/rrisk/rtrpg.html>. The data files include detailed information for each HAP emissions release point for the facilities in the source category.

If you believe that the data are not representative or are inaccurate, please identify the data in question, provide your reason for concern and provide any "improved" data that you have, if available. When you submit data, we request that you provide documentation of the basis for the revised values to support your suggested changes. To submit comments on the data downloaded from the RTR Web page, complete the following steps:

1. Within this downloaded file, enter suggested revisions to the data fields appropriate for that information.



2. Fill in the commenter information fields for each suggested revision (i.e., commenter name, commenter organization, commenter email address, commenter phone number and revision comments).

3. Gather documentation for any suggested emissions revisions (e.g., performance test reports, material balance calculations, etc.).

4. Send the entire downloaded file with suggested revisions in Microsoft® Access format and all accompanying documentation to Docket ID Number EPA-HQ-OAR-2012-0522 (through one of the methods described in the **ADDRESSES** section of this preamble).

5. If you are providing comments on a single facility or multiple facilities, you need only submit one file for all facilities. The file should contain all suggested changes for all sources at that facility. We request that all data revision comments be submitted in the form of updated Microsoft® Excel files that are generated by the Microsoft® Access file. These files are provided on the RTR Web page at:  
<http://www.epa.gov/ttn/atw/rrisk/rtrpg.html>.

## **IX. Statutory and Executive Order Reviews**

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a "significant regulatory action" under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is, therefore, not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011). The EPA analyzed the potential costs and benefits associated with this action. The results are presented in sections VI.C and E of this preamble.

#### B. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501, et seq. The Information Collection Request (ICR) document prepared by the EPA has been assigned EPA ICR number 1790.06. The information requirements are based on notification, recordkeeping and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emissions standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to EPA policies set forth in 40 CFR part 2, subpart B.

We are proposing new paperwork requirements to the Phosphoric Acid Manufacturing and Phosphate Fertilizer

Production source categories in the form of additional requirements for stack testing, performance evaluations, and gypsum dewatering stacks.

We estimate 12 regulated entities are currently subject to 40 CFR part 63 subpart AA and 10 regulated entities are currently subject to 40 CFR part 63 subpart BB and each will be subject to all applicable proposed standards. The annual monitoring, reporting and recordkeeping burden for these amendments to subpart AA and BB is estimated to be \$625,000 per year (averaged over the first 3 years after the effective date of the standards). This includes 640 labor hours per year at a total labor cost of \$53,000 per year, and total non-labor capital and operating and maintenance costs of \$572,000 per year. This estimate includes performance tests, notifications, reporting and recordkeeping associated with the new requirements for emission points and associated control devices. The total burden to the federal government is estimated to be 326 hours per year at a total labor cost of \$17,000 per year (averaged over the first 3 years after the effective date of the standard). Burden is defined at 5 CFR 1320.3(b).

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control

numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

To comment on the agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden, the EPA has established a public docket for this rule (Docket ID No. EPA-HQ-OAR-2012-0522) which includes this ICR. Submit any comments related to the ICR to the EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to the EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Office for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, a comment to OMB is best assured of having its full effect if OMB receives it by **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

#### C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the

agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) a small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This proposed rule will not impose any requirements on small entities because we do not project that any small entities will incur costs due to these proposed rule amendments. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

This action contains no federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531-1538 for state, local, or tribal governments or the private sector. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it does not contain regulatory requirements that might significantly or uniquely affect small governments because this action neither contains requirements that apply to such governments nor does it impose obligations upon them.

#### E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. None of the facilities subject to this action are owned or operated by state governments, and nothing in this proposal will supersede state regulations. Thus, Executive Order 13132 does not apply to this action.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between the EPA and state and local governments, the EPA specifically solicits comment on this proposed rule from state and local officials.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Subject to the Executive Order 13175 (65 FR 67249, November 9, 2000), the EPA may not issue a regulation that has tribal implications, that imposes substantial direct compliance costs and that is not required by statute, unless the federal government provides the funds necessary to pay the direct compliance costs incurred by tribal governments, or the EPA consults with tribal officials early in the process of developing the proposed regulation and develops a tribal summary impact statement.

The EPA has concluded that this action may have tribal implications, due to the close proximity of one facility to a tribe (the Shoshone-Bannock). However, this action will neither impose substantial direct compliance costs on tribal governments, nor preempt tribal law.

The EPA consulted with tribal officials early in the process of developing this regulation to permit them to have meaningful and timely input into its development. The agency provided an overview of the source categories and rulemaking

process during a monthly teleconference with the National Tribal Air Association. Additionally, we provided targeted outreach, including a visit to the Shoshone-Bannock tribe and meeting with environmental leaders for the tribe. The EPA specifically solicits additional comment on this proposed action from tribal officials.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

This action is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it is not economically significant as defined in Executive Order 12866. This action's health and risk assessments are contained in section V of this preamble.

The proposed standards for Hg emissions from phosphate rock calciners will reduce Hg emissions, thereby reducing potential exposure to children, including the unborn. We invite the public to submit comments or identify peer-reviewed studies and data that assess effects of early life exposure to these pollutants.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" as defined in Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The proposed changes to



the emissions limits may require one facility to install additional control for Hg in the form of carbon adsorbers or ACI. These devices have minimal energy requirements, and we do not expect these devices to contribute significantly to the overall energy use at the facility. We have concluded that this rule is not likely to have any adverse energy effects.

#### I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law Number 104-113, 12(d) (15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. VCS are technical standards (e.g., materials specifications, test methods, sampling procedures and business practices) that are developed or adopted by VCS bodies. The NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable VCS.

This proposed rulemaking involves technical standards. The EPA proposes to incorporate analytical methods of the Association of Official Analytical Chemists (AOAC) and of the Association of Fertilizer and Phosphate Chemists (AFPC). The EPA proposes to incorporate by reference the following AOAC methods: AOAC Official Method 957.02 Phosphorus (Total) in Fertilizers,

Preparation of Sample Solution, AOAC Official Method 929.01  
Sampling of Solid Fertilizers, AOAC Official Method 929.02  
Preparation of Fertilizer Sample, AOAC Official Method 978.01  
Phosphorous (Total) in Fertilizers, Automated Method, AOAC  
Official Method 969.02 Phosphorous (Total) in Fertilizers,  
Alkalimetric Quinolinium Molybdophosphate Method, AOAC Official  
Method 962.02 Phosphorous (Total) in Fertilizers, Gravimetric  
Quinolinium Molybdophosphate Method and Quinolinium  
Molybdophosphate Method 958.01 Phosphorous (Total) in  
Fertilizers, Spectrophotometric Molybdovanadophosphate Method.  
The EPA proposes to incorporate the following AFPC methods for  
analysis of phosphate rock: No. 1 Preparation of Sample, No. 3  
Phosphorus-P<sub>2</sub>O<sub>5</sub> or Ca<sub>3</sub>(P<sub>4</sub>)<sub>2</sub>, Method A-Volumetric Method, No. 3  
Phosphorus-P<sub>2</sub>O<sub>5</sub> or Ca<sub>3</sub>(P<sub>4</sub>)<sub>2</sub>, Method B-Gravimetric Quimociac  
Method, No. 3 Phosphorus-P<sub>2</sub>O<sub>5</sub> or Ca<sub>3</sub>(P<sub>4</sub>)<sub>2</sub>, Method C-  
Spectrophotometric Method. The EPA proposes to incorporate the  
following AFPC methods for analysis of phosphoric acid,  
superphosphate, triple superphosphate and ammonium phosphates:  
No. 3 Total Phosphorus-P<sub>2</sub>O<sub>5</sub>, Method A-Volumetric Method, No. 3  
Total Phosphorus-P<sub>2</sub>O<sub>5</sub>, Method B-Gravimetric Quimociac Method and  
No. 3 Total Phosphorus-P<sub>2</sub>O<sub>5</sub>, Method C-Spectrophotometric Method.

We did not identify any applicable VCS for EPA Methods 5,  
13A, 13B or 30B. We did identify one VCS, ASTM D6348-03(2010),  
as an acceptable alternative for Method 320.

During EPA's VCS search, if the title or abstract (if provided) of the VCS described technical sampling and analytical procedures that are similar to the EPA's reference method, the EPA ordered a copy of the standard and reviewed it as a potential equivalent method. We reviewed all potential standards to determine the practicality of the VCS for this rule. This review requires significant method validation data that meet the requirements of EPA Method 301 for accepting alternative methods or scientific, engineering and policy equivalence to procedures in EPA reference methods. The EPA may reconsider determinations of impracticality when additional information is available for particular VCS.

The search identified 8 other VCS that were potentially applicable for this rule in lieu of the EPA reference methods. After reviewing the available standards, the EPA determined that 8 candidate VCS identified for measuring emissions of pollutants or their surrogates subject to emission standards in the rule would not be practical due to lack of equivalency, documentation, validation data and other important technical and policy considerations. Additional information for the VCS search and determinations can be found in the memorandum, "Voluntary Consensus Standard Results for Phosphoric Acid Manufacturing and Phosphate Fertilizer Production RTR and Standards of Performance

for Phosphate Processing," which is available in the docket for this action.

The EPA welcomes comments on this aspect of the proposed rulemaking, and, specifically, invites the public to identify potentially applicable VCS, and to explain why the EPA should use such standards in this regulation.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practical and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations in the United States.

The EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or

environmental effects on any population, including any minority or low-income population. To gain a better understanding of the source category and near source populations, the EPA conducted a proximity analysis on phosphate facilities to identify any overrepresentation of minority, low income or indigenous populations. This analysis only gives some indication of the prevalence of sub-populations that may be exposed to air pollution from the sources; it does not identify the demographic characteristics of the most highly affected individuals or communities, nor does it quantify the level of risk faced by those individuals or communities. More information on the source categories risk can be found in section IV of this preamble.

The proximity analysis reveals that most demographic categories are below or within 20 percent of their corresponding national averages. The two exceptions are the minority and African American populations. The ratio of African Americans living within 3 miles of any source affected by this rule is 131 percent higher than the national average (29 percent versus 13 percent). The percentage of minorities living within 3 miles of any source affected by this rule is 37 percent above the national average (35 percent versus 28 percent). The large minority population is a direct result of the higher percentage of African Americans living near these facilities (the other racial minorities are below or equal to the national average).

However, as noted previously, we found the risks from these source categories to be acceptable for all populations.

The proposed changes to the standard increase the level of environmental protection for all affected populations by ensuring no future emission increases from the source categories. Additionally, the proposed standards for Hg emissions from phosphate rock calciners will reduce Hg emissions, thereby reducing potential exposure to sustenance fishers and other sensitive populations. The proximity analysis results and the details concerning their development are presented in the October 2012 memorandum, "Environmental Justice Review: Phosphate Fertilizer Production and Phosphoric Acid," a copy of which is available in Docket ID No. EPA-HQ-OAR-2012-0522.

**List of Subjects**

40 CFR Part 60

Environmental protection, Air pollution control, Fertilizers, Fluoride, Particulate matter, Phosphate, Reporting and recordkeeping requirements.

40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Dated: October 21, 2014.

Gina McCarthy,  
Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency proposes to amend title 40, chapter I, of the Code of Federal Regulations as follows:

**PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES**

1. The authority citation for part 60 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

**Subpart T—Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants**

2. Section 60.200 is amended by revising paragraph (a) to read as follows:

**§ 60.200 Applicability and designation of affected facility.**

(a) The affected facility to which the provisions of this subpart apply is each wet-process phosphoric acid plant having a design capacity of more than 15 tons of equivalent  $P_2O_5$  feed per calendar day.

\* \* \* \* \*

3. Section 60.201 is amended by revising paragraph (a) to read as follows.

**§ 60.201 Definitions.**

\* \* \* \* \*

(a) Wet-process phosphoric acid plan means any facility manufacturing phosphoric acid by reacting phosphate rock and acid. A wet-process phosphoric acid plant includes, but is not



limited to: reactors, filters, evaporators, hot wells, clarifiers, and defluorination systems.

\* \* \* \* \*

4. Section 60.203 is amended by revising paragraph (c) and adding paragraph (d) to read as follows:

**§ 60.203 Monitoring of operations.**

\* \* \* \* \*

(c) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the absorber. The monitoring device shall have an accuracy of  $\pm 5$  percent over its operating range.

(d) Any facility under § 60.200(a) that commences construction, modification or reconstruction after [**date of publication of the final rule in the Federal Register**] is subject to the requirements of this paragraph instead of the requirements in paragraph (c) of this section. If an absorber is used to comply with § 60.202, then the owner or operator shall continuously monitor pressure drop through the absorber and meet the requirements specified in paragraphs (d)(1) through (4) of this section.

(1) The owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system (CMS) that

continuously measures and permanently records the pressure at the gas stream inlet and outlet of the absorber. The pressure at the gas stream inlet of the absorber may be measured using amperage on the blower if a correlation between pressure and amperage is established.

(2) The CMS must have an accuracy of  $\pm 5$  percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.

(3) The owner or operator shall establish an allowable range for the pressure drop through the absorber. The allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test required in § 60.8. The Administrator retains the right to reduce the  $\pm 20$  percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable emissions standard. However, the adjustment must not be reduced to less than  $\pm 10$  percent under any instance.

(4) The owner or operator shall demonstrate continuous compliance by maintaining the daily average pressure drop through the absorber to within the allowable range established in paragraph (d)(3) of this section. The daily average pressure drop through the absorber for each operating day shall be calculated using the data recorded by the monitoring system. If

the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not continuous, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average.

5. Subpart T is amended by adding § 60.205 to read as follows:

**§ 60.205 Recordkeeping.**

Any facility under § 60.200(a) that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** is subject to the requirements of this section. You must maintain the records identified as specified in § 60.7(f) and in paragraphs (a) and (b) of this section. All records required by this subpart must be maintained on site for at least 5 years.

(a) Records of the daily average pressure. Records of the daily average pressure drop through the absorber.

(b) Records of deviations. A deviation is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified in paragraphs (b)(1) and (2) of this section being met.

(1) A deviation occurs when the daily average value of a monitored operating parameter is less than the minimum pressure

drop, or greater than the maximum pressure drop established in § 60.203(d)(3).

(2) A deviation occurs when the monitoring data are not available for at least 75 percent of the operating hours in a day.

**Subpart U-Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants**

6. Section 60.210 is amended by revising paragraph (a) to read as follows:

**§ 60.210 Applicability and designation of affected facility.**

(a) The affected facility to which the provisions of this subpart apply is each superphosphoric acid plant having a design capacity of more than 15 tons of equivalent  $P_2O_5$  feed per calendar day.

\* \* \* \* \*

7. Section 60.211 is amended by revising paragraph (a) to read as follows:

**§ 60.211 Definitions.**

\* \* \* \* \*

(a) Superphosphoric acid plant means any facility which concentrates wet-process phosphoric acid to 66 percent or greater  $P_2O_5$  content by weight for eventual consumption as a fertilizer. A superphosphoric acid plant includes, but is not

limited to: evaporators, hot wells, acid sumps, oxidation reactors, and cooling tanks.

\* \* \* \* \*

8. Section 60.213 is amended by revising paragraph (c) and adding paragraph (d) to read as follows:

**§ 60.213 Monitoring of operations.**

\* \* \* \* \*

(c) Except as specified in paragraph (d) of this section, the owner or operator of any superphosphoric acid plant subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the absorber. The monitoring device shall have an accuracy of  $\pm 5$  percent over its operating range.

(d) Any affected facility as defined in § 60.210(a) that commences construction, modification or reconstruction after **[date of publication of the final rule in the Federal Register]** is subject to the requirements of this paragraph instead of the requirements in paragraph (c) of this section. If an absorber is used to comply with § 60.212, then the owner or operator shall continuously monitor pressure drop through the absorber and meet the requirements specified in paragraphs (d)(1) through (4) of this section.

(1) The owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system (CMS) that continuously measures and permanently records the pressure at the gas stream inlet and outlet of the absorber. The pressure at the gas stream inlet of the absorber may be measured using amperage on the blower if a correlation between pressure and amperage is established.

(2) The CMS must have an accuracy of  $\pm 5$  percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.

(3) The owner or operator shall establish an allowable range for the pressure drop through the absorber. The allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test required in § 60.8. The Administrator retains the right to reduce the  $\pm 20$  percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable emissions standard. However, the adjustment must not be reduced to less than  $\pm 10$  percent under any instance.

(4) The owner or operator shall demonstrate continuous compliance by maintaining the daily average pressure drop through the absorber to within the allowable range established in paragraph (d)(3) of this section. The daily average pressure

drop through the absorber for each operating day shall be calculated using the data recorded by the monitoring system. If the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not continuous, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average.

9. Subpart U is amended by adding §60.215 to read as follows:

**§ 60.215 Recordkeeping.**

An affected facility as defined in § 60.210(a) that commences construction, modification, or reconstruction after **[date of publication of the final rule in the Federal Register]** is subject to the requirements of this section. You must maintain the records identified as specified in § 60.7(f) and in paragraphs (a) and (b) of this section. All records required by this subpart must be maintained on site for at least 5 years.

(a) Records of the daily average pressure drop through the absorber.

(b) Records of deviations. A deviation is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified in paragraphs (b)(1) and (b)(2) of this section being met.

(1) A deviation occurs when the daily average value of a monitored operating parameter is less than the minimum pressure drop, or greater than the maximum pressure drop established in § 60.213(d)(3).

(2) A deviation occurs when the monitoring data are not available for at least 75 percent of the operating hours in a day.

**Subpart V—Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants**

10. Section 60.223 is amended by revising paragraph (c) and adding paragraph (d) to read as follows:

**§ 60.223 Monitoring of operations.**

\* \* \* \* \*

(c) Except as specified in paragraph (d) of this section, the owner or operator of any granular diammonium phosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the scrubbing system. The monitoring device shall have an accuracy of  $\pm 5$  percent over its operating range.

(d) Any affected facility as defined in § 60.220(a) that commences construction, modification, or reconstruction after [date of publication of the final rule in the Federal Register] is subject to the requirements of this paragraph instead of the



requirements in paragraph (c) of this section. If an absorber is used to comply with § 60.222, then the owner or operator shall continuously monitor pressure drop through the absorber and meet the requirements specified in paragraphs (d)(1) through (4) of this section.

(1) The owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system (CMS) that continuously measures and permanently records the pressure at the gas stream inlet and outlet of the absorber. The pressure at the gas stream inlet of the absorber may be measured using amperage on the blower if a correlation between pressure and amperage is established.

(2) The CMS must have an accuracy of  $\pm 5$  percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.

(3) The owner or operator shall establish an allowable range for the pressure drop through the absorber. The allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test required in § 60.8. The Administrator retains the right to reduce the  $\pm 20$  percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable

emissions standard. However, the adjustment must not be reduced to less than  $\pm 10$  percent under any instance.

(4) The owner or operator shall demonstrate continuous compliance by maintaining the daily average pressure drop through the absorber to within the allowable range established in paragraph (d)(3) of this section. The daily average pressure drop through the absorber for each operating day shall be calculated using the data recorded by the monitoring system. If the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not continuous, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average.

11. Section 60.224 is amended by revising paragraph (b)(3)(ii) to read as follows:

**§ 60.224 Test methods and procedures.**

\* \* \* \* \*

(b) \* \* \*

(3) \* \* \*

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the  $P_2O_5$  content ( $R_p$ ) of the feed.

12. Subpart V is amended by adding § 60.225 to read as follows:

**§ 60.225 Recordkeeping.**

An affected facility as defined in § 60.220(a) that commences construction, modification, or reconstruction after **[date of publication of the final rule in the Federal Register]** is subject to the requirements of this section. You must maintain the records identified as specified in § 60.7(f) and in paragraphs (a) and (b) of this section. All records required by this subpart must be maintained on site for at least 5 years.

(a) Records of the daily average pressure drop through the absorber.

(b) Records of deviations. A deviation is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified in paragraphs (b)(1) and (2) of this section being met.

(1) A deviation occurs when the daily average value of a monitored operating parameter is less than the minimum pressure drop, or greater than the maximum pressure drop established in § 60.223(d)(3).

(2) A deviation occurs when the monitoring data are not available for at least 75 percent of the operating hours in a day.

**Subpart W—Standards of Performance for the Phosphate Fertilizer  
Industry: Triple Superphosphate Plants**

13. Section 60.230 is amended by revising paragraph (a) to read as follows:

**§ 60.230 Applicability and designation of affected facility.**

(a) The affected facility to which the provisions of this subpart apply is each triple superphosphate plant having a design capacity of more than 15 tons of equivalent  $P_2O_5$  feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: mixers, curing belts (dens), reactors, granulators, dryers, coolers, screens, mills, and facilities which store run-of-pile triple superphosphate.

\* \* \* \* \*

14. Section 60.233 is revised to read as follows:

**§ 60.233 Monitoring of operations.**

(a) The owner or operator of any triple superphosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of  $\pm 5$  percent over its operating range.

(b) The owner or operator of any triple superphosphate plant shall maintain a daily record of equivalent  $P_2O_5$  feed by

first determining the total mass rate in Mg/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to § 60.234(b)(3).

(c) Except as specified in paragraph (d) of this section, the owner or operator of any triple superphosphate plant subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the absorber. The monitoring device shall have an accuracy of  $\pm 5$  percent over its operating range.

(d) Any facility under § 60.230(a) that commences construction, modification, or reconstruction after [**date of publication of the final rule in the Federal Register**] is subject to the requirements of this paragraph instead of the requirements in paragraph (c) of this section. If an absorber is used to comply with § 60.232, then the owner or operator shall continuously monitor pressure drop through the absorber and meet the requirements specified in paragraphs (d)(1) through (4) of this section.

(1) The owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system (CMS) that continuously measures and permanently records the pressure at the gas stream inlet and outlet of the absorber. The pressure at

the gas stream inlet of the absorber may be measured using amperage on the blower if a correlation between pressure and amperage is established.

(2) The CMS must have an accuracy of  $\pm 5$  percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.

(3) The owner or operator shall establish an allowable range for the pressure drop through the absorber. The allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test required in § 60.8. The Administrator retains the right to reduce the  $\pm 20$  percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable emissions standard. However, the adjustment must not be reduced to less than  $\pm 10$  percent under any instance.

(4) The owner or operator shall demonstrate continuous compliance by maintaining the daily average pressure drop through the absorber to within the allowable range established in paragraph (d)(3) of this section. The daily average pressure drop through the absorber for each operating day shall be calculated using the data recorded by the monitoring system. If the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not

continuous, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average.

15. Subpart W is amended by adding § 60.235 to read as follows:

**§ 60.235 Recordkeeping.**

Any facility under § 60.230(a) that commences construction, modification, or reconstruction after **[date of publication of the final rule in the Federal Register]** is subject to the requirements of this section. You must maintain the records identified as specified in § 60.7(f) and in paragraphs (a) and (b) of this section. All records required by this subpart must be maintained onsite for at least 5 years.

(a) Records of the daily average pressure drop through the absorber.

(b) Records of deviations. A deviation is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified in paragraphs (b)(1) and (2) of this section being met.

(1) A deviation occurs when the daily average value of a monitored operating parameter is less than the minimum pressure drop, or greater than the maximum pressure drop established in § 60.233(d)(3).

(2) A deviation occurs when the monitoring data are not available for at least 75 percent of the operating hours in a day.

**Subpart X—Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities**

16. Section 60.243 is amended by revising paragraph (c) and adding (e) to read as follows:

**§ 60.243 Monitoring of operations.**

\* \* \* \* \*

(c) Except as specified in paragraph (e) of this section, the owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across any absorber. The monitoring device shall have an accuracy of  $\pm 5$  percent over its operating range.

\* \* \* \* \*

(e) Any facility under § 60.240(a) that commences construction, modification, or reconstruction after [**date of publication of the final rule in the Federal Register**] is subject to the requirements of this paragraph instead of the requirements in paragraph (c) of this section. If an absorber is used to comply with § 60.232, then the owner or operator shall continuously monitor pressure drop through the absorber and meet



the requirements specified in paragraphs (e)(1) through (4) of this section.

(1) The owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system (CMS) that continuously measures and permanently records the pressure at the gas stream inlet and outlet of the absorber. The pressure at the gas stream inlet of the absorber may be measured using amperage on the blower if a correlation between pressure and amperage is established.

(2) The CMS must have an accuracy of  $\pm 5$  percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.

(3) The owner or operator shall establish an allowable range for the pressure drop through the absorber. The allowable range is  $\pm 20$  percent of the arithmetic average of the three test runs conducted during the performance test required in § 60.8. The Administrator retains the right to reduce the  $\pm 20$  percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable emissions standard. However, the adjustment must not be reduced to less than  $\pm 10$  percent under any instance.

(4) The owner or operator shall demonstrate continuous compliance by maintaining the daily average pressure drop

through the absorber to within the allowable range established in paragraph (e)(3) of this section. The daily average pressure drop through the absorber for each operating day shall be calculated using the data recorded by the monitoring system. If the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not continuous, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average.

17. Subpart X is amended by adding § 60.245 to read as follows:

**§ 60.245 Recordkeeping.**

Any facility under § 60.240(a) that commences construction, modification, or reconstruction after **[date of publication of the final rule in the Federal Register]** is subject to the requirements of this section. You must maintain the records identified as specified in § 60.7(f) and in paragraphs (a) and (b) of this section. All records required by this subpart must be maintained onsite for at least 5 years.

(a) Records of the daily average pressure drop through the absorber.

(b) Records of deviations. A deviation is determined to have occurred when the monitoring data or lack of monitoring

data result in any one of the criteria specified in paragraphs (b)(1) and (2) of this section being met.

(1) A deviation occurs when the daily average value of a monitored operating parameter is less than the minimum pressure drop, or greater than the maximum pressure drop established in § 60.243(e)(3).

(2) A deviation occurs when the monitoring data are not available for at least 75 percent of the operating hours in a day.

**PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS  
FOR SOURCE CATEGORIES**

18. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

**Subpart A—General Provisions**

19. Section 63.14 is amended by revising paragraphs (b), (c)(1) through (7), and (1)(2) to read as follows.

**§ 63.14 Incorporations by reference.**

\* \* \* \* \*

(b) The Association of Florida Phosphate Chemists, P.O. Box 1645, Bartow, Florida 33830.

(1) Book of Methods Used and Adopted By The Association of Florida Phosphate Chemists, Seventh Edition 1991:

(i) Section IX, Methods of Analysis for Phosphate Rock, No. 1 Preparation of Sample, IBR approved for §63.606(f)(3)(ii)(A), §63.626(f)(3)(ii)(A).

(ii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method A-Volumetric Method, IBR approved for §63.606(f)(3)(ii)(B), §63.626(f)(3)(ii)(B).

(iii) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method B-Gravimetric Quimociac Method, IBR approved for §63.606(f)(3)(ii)(C), §63.626(f)(3)(ii)(C).

(iv) Section IX, Methods of Analysis For Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method C-Spectrophotometric Method, IBR approved for §63.606(f)(3)(ii)(D), §63.626(f)(3)(ii)(D).

(v) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method A-Volumetric Method, IBR approved for §63.606(f)(3)(ii)(E), §63.626(f)(3)(ii)(E), and §63.626(g)(6)(i).

(vi) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method B-Gravimetric Quimociac Method, IBR approved for §63.606(f)(3)(ii)(F), §63.626(f)(3)(ii)(F), and §63.626(g)(6)(ii).

(vii) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method C-Spectrophotometric Method, IBR approved for §63.606(f)(3)(ii)(G), §63.626(f)(3)(ii)(G), and §63.626(g)(6)(iii).

(2) [Reserved]

(c) \* \* \*

(1) AOAC Official Method 929.01 Sampling of Solid Fertilizers, Sixteenth edition, 1995, IBR approved for §63.626(g)(7)(ii).

(2) AOAC Official Method 929.02 Preparation of Fertilizer Sample, Sixteenth edition, 1995, IBR approved for §63.626(g)(7)(iii).

(3) AOAC Official Method 957.02 Phosphorus (Total) in Fertilizers, Preparation of Sample Solution, Sixteenth edition, 1995, IBR approved for §63.626(g)(7)(i).

(4) AOAC Official Method 958.01 Phosphorus (Total) in Fertilizers, Spectrophotometric Molybdovanadophosphate Method, Sixteenth edition, 1995, IBR approved for §63.626(g)(7)(vii).

(5) AOAC Official Method 962.02 Phosphorus (Total) in Fertilizers, Gravimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for §63.626(g)(7)(vi).

(6) AOAC Official Method 969.02 Phosphorus (Total) in Fertilizers, Alkalimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995, IBR approved for §63.626(g)(7)(v).

(7) AOAC Official Method 978.01 Phosphorus (Total) in Fertilizers, Automated Method, Sixteenth edition, 1995, IBR approved for §63.626(g)(7)(iv).

\* \* \* \*

(1) \* \*

(2) Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, EPA-454/R-98-015, September 1997, IBR approved for §§ 63.548(e)(4), 63.606(m), 63.607(b)(2)(ii), 63.626(h), 63.627(b)(2)(iii), 63.7525(j)(2), and 63.11224(f)(2).

\* \* \* \*

20. Part 63 is amended by revising subpart AA to read as follows:

**Subpart AA—National Emission Standards for Hazardous Air Pollutants from Phosphoric Acid Manufacturing Plants**

**Sec.**

63.600 Applicability.

63.601 Definitions.

63.602 Standards and compliance dates.

63.603 [Reserved]

63.604 [Reserved]

63.605 Operating and monitoring requirements.

63.606 Performance tests and compliance provisions.  
63.607 Notification, recordkeeping, and reporting requirements.  
63.608 General requirements and applicability of part 63 general provisions.  
63.609 [Reserved]  
63.610 Exemption from new source performance standards.  
63.611 Implementation and enforcement.  
Table 1 to Subpart AA of Part 63—Existing Source Phase 1 Emission Limits  
Table 1a to Subpart AA of Part 63—Existing Source Phase 2 Emission Limits and Work Practice Standards  
Table 2 to Subpart AA of Part 63—New Source Phase 1 Emission Limits  
Table 2a to Subpart AA of Part 63—New Source Phase 2 Emission Limits and Work Practices  
Table 3 to Subpart AA of Part 63—Monitoring Equipment Operating Parameters  
Table 4 to Subpart AA of Part 63—Operating Parameters, Operating Limits and Data Monitoring, Recordkeeping and Compliance Frequencies  
Table 5 to Subpart AA of Part 63—Calibration and Quality Control Requirements for Continuous Parameter Monitoring System (CPMS)  
Appendix A to Subpart AA of Part 63—Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart AA

**§ 63.600 Applicability.**

(a) Except as provided in paragraphs (c) and (d) of this section, you are subject to the requirements of this subpart if you own or operate a phosphoric acid manufacturing plant that is a major source as defined in § 63.2. You must comply with the emission limitations, work practice standards, and operating parameter requirements specified in this subpart at all times.

(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAP) emitted from the following affected sources at a phosphoric acid manufacturing plant:

- (1) Each wet-process phosphoric acid process line.

- (2) Each evaporative cooling tower.
- (3) Each phosphate rock dryer.
- (4) Each phosphate rock calciner.
- (5) Each superphosphoric acid process line.
- (6) Each purified phosphoric acid process line.
- (7) Each gypsum dewatering stack pond associated with the phosphoric acid manufacturing plant.

(c) The requirements of this subpart do not apply to a phosphoric acid manufacturing plant that is an area source as defined in § 63.2.

(d) The provisions of this subpart do not apply to research and development facilities as defined in § 63.601.

**§ 63.601 Definitions.**

Terms used in this subpart are defined in § 63.2 of the Clean Air Act and in this section as follows:

Active gypsum dewatering stack means a gypsum dewatering stack that does not meet the definition of closed gypsum dewatering stack.

Breakthrough means the point in time when the level of mercury detected at the outlet of an adsorber system is 90 percent of the highest concentration allowed to be discharged consistent with the applicable emission limit.

Closed gypsum dewatering stack means a gypsum dewatering stack that is no longer receiving phosphogypsum, and has



received a cover on the top and sides. The final cover of a closed gypsum dewatering stack must include a barrier soil layer that will sustain vegetation and a drought resistant vegetative cover.

Cooling pond means a natural or artificial open reservoir that is primarily used to collect and cool water that comes into direct contact with raw materials, intermediate products, by-products, waste products, or finished products from a phosphoric acid manufacturing plant. The water in the cooling pond is often used at phosphoric acid manufacturing plants as filter wash water, absorber water for air pollution control absorbers, and/or to transport phosphogypsum as slurry to a gypsum dewatering stack(s).

Equivalent  $P_2O_5$  feed means the quantity of phosphorus, expressed as phosphorus pentoxide ( $P_2O_5$ ), fed to the process.

Evaporative cooling tower means an open-water, re-circulating device that uses fans or natural draft to draw or force ambient air through the device to remove heat from process water by direct contact.

Exceedance means a departure from an indicator range established for monitoring under this subpart, consistent with any averaging period specified for averaging the results of the monitoring.

Existing source depends on the date that construction or reconstruction of an affected source commenced. A wet-process phosphoric acid process line, superphosphoric acid process line, rock dryer, rock calciner, evaporative cooling tower, or purified acid process line is an existing source if construction or reconstruction of the affected source commenced on or before December 27, 1996. A gypsum dewatering stack or cooling pond is an existing source if construction or reconstruction of the gypsum dewatering stack or cooling pond commenced on or before **[date of publication of the final rule in the Federal Register]**.

Gypsum dewatering stack means the phosphogypsum stack (or pile, or landfill), together with all pumps, piping, ditches, drainage conveyances, water control structures, collection pools, cooling ponds, surge ponds, auxiliary holding ponds, and any other collection or conveyance system associated with the transport of phosphogypsum from the plant to the gypsum dewatering stack, its management at the stack, and the process wastewater return to the phosphoric acid production or other process. This definition includes toe drain systems, ditches and other leachate collection systems, but does not include conveyances within the confines of the fertilizer plant or emergency diversion impoundments used in emergency circumstances caused by rainfall events of high volume or duration for the

temporary storage of process wastewater to avoid discharges to surface waters.

HAP metals mean those metals and their compounds (in particulate or volatile form) that are included on the list of hazardous air pollutants in section 112 of the Clean Air Act. HAP metals include, but are not limited to: antimony, arsenic, beryllium, cadmium, chromium, Pb, manganese, nickel, and selenium expressed as particulate matter as measured by the methods and procedures in this subpart or an approved alternative method. For the purposes of this subpart, HAP metals (except mercury) are expressed as particulate matter as measured by Method 5 at 40 CFR part 60, appendix A-3.

New source depends on the date that construction or reconstruction of an affected source commences. A wet-process phosphoric acid process line, superphosphoric acid process line, rock dryer, rock calciner, evaporative cooling tower, or purified acid process line is a new source if construction or reconstruction of the affected source commenced after December 27, 1996. A gypsum dewatering stack or cooling pond is a new source if construction or reconstruction of the gypsum dewatering stack or cooling pond commenced after **[date of publication of the final rule in the Federal Register]**

Phosphate rock calciner means the equipment used to remove moisture and organic matter from phosphate rock through direct or indirect heating.

Phosphate rock dryer means the equipment used to reduce the moisture content of phosphate rock through direct or indirect heating.

Phosphate rock feed means all material entering any phosphate rock dryer or phosphate rock calciner including moisture and extraneous material as well as the following ore materials: fluorapatite, hydroxylapatite, chlorapatite, and carbonateapatite.

Phosphoric acid defluorination process means any process that treats phosphoric acid in a manner that removes fluorine compounds.

Phosphoric acid oxidation reactor means any equipment that uses an oxidizing agent to treat phosphoric acid.

Process line means all equipment associated with the production of any grade or purity of a phosphoric acid product including emission control equipment.

Purified phosphoric acid process line means any process line that uses a HAP as a solvent in the separation of impurities from the product acid for the purposes of rendering that product suitable for industrial, manufacturing, or food grade uses. A purified phosphoric acid process line includes,

but is not limited to: solvent extraction process equipment, solvent stripping and recovery equipment, seal tanks, carbon treatment equipment, cooling towers, storage tanks, pumps, and process piping.

Raffinate stream means the aqueous stream containing the impurities that are removed during the purification of wet-process phosphoric acid using solvent extraction.

Research and development facility means research or laboratory operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and where the facility is not engaged in the manufacture of products for commercial sale in commerce or other off-site distribution, except in a de minimis manner.

Superphosphoric acid process line means any process line that concentrates wet-process phosphoric acid to 66 percent or greater  $P_2O_5$  content by weight. A superphosphoric acid process line includes, but is not limited to: evaporators, hot wells, acid sumps, oxidation reactors, and cooling tanks.

Total fluorides means elemental fluorine and all F compounds, including the HAP HF, as measured by reference methods specified in 40 CFR part 60, appendix A , Method 13 A or B, or by equivalent or alternative methods approved by the Administrator pursuant to §63.7(f).

Wet-process phosphoric acid process line means any process line manufacturing phosphoric acid by reacting phosphate rock and acid. A wet-process phosphoric acid process line includes, but is not limited to: reactors, filters, evaporators, hot wells, clarifiers, and defluorination systems.

**§ 63.602 Standards and compliance dates.**

(a) On and after the date on which the initial performance test specified in §§ 63.7 and 63.606 is required to be completed, for each wet-process phosphoric acid process line, superphosphoric acid process line, rock dryer, and rock calciner, you must comply with the emission limits and work practice standards as specified in paragraphs (a)(1) through (6) of this section. If a process line contains more than one emission point, you must sum the emissions from all emission points in a process line to determine compliance with the specified emission limits.

(1) For each existing wet-process phosphoric acid process line, superphosphoric acid process line, and rock dryer that commenced construction or reconstruction on or before December 27, 1996, you must comply with the emission limits specified in Table 1 to this subpart beginning on June 10, 2002 and ending on [date one year after the date of publication of the final rule in the Federal Register]. Beginning on [date one year after the date of publication of the final rule in the Federal Register],

the emission limits specified in Table 1 to this subpart no longer apply, and you must comply with the emission limits specified in Table 1a to this subpart.

(2) For each existing rock calciner that commenced construction or reconstruction on or before December 27, 1996, you must comply with the emission limits as specified in paragraphs (a)(2)(i) and (ii) of this section, and the work practice standards as specified in paragraph (a)(2)(iii) of this section.

(i) You must comply with the total particulate emission limit specified in Tables 1 and 1a to this subpart beginning on June 10, 2002.

(ii) You must comply with the mercury emission limit specified in Table 1a to this subpart beginning on **[date three years after the date of publication of the final rule in the Federal Register]**.

(iii) You must comply with the hydrogen fluoride work practice standards specified in Table 1a to this subpart beginning on **[date of publication of the final rule in the Federal Register]**.

(3) For each new wet-process phosphoric acid process line, superphosphoric acid process line, and rock dryer that commences construction or reconstruction after December 27, 1996 and on or before **[date of publication of the final rule in the Federal**

**Register]**, you must comply with the emission limits specified in Table 2 to this subpart beginning at startup or on June 10, 1999, whichever is later, and ending on **[date one year after the date of publication of the final rule in the Federal Register]**. Beginning on **[date one year after the date of publication of the final rule in the Federal Register]**, the emission limits specified in Table 2 to this subpart no longer apply, and you must comply with the emission limits specified in Table 2a to this subpart beginning on **[date one year after the date of publication of the final rule in the Federal Register]** or immediately upon startup, whichever is later.

(4) For each new wet-process phosphoric acid process line, superphosphoric acid process line, and rock dryer that commences construction or reconstruction after **[date of publication of the final rule in the Federal Register]**, you must comply with the emission limits specified in Table 2a to this subpart immediately upon startup.

(5) For each new rock calciner that commences construction or reconstruction after December 27, 1996 and on or before **[date of publication of the final rule in the Federal Register]**, you must comply with the emission limits as specified in paragraphs (a)(5)(i) and (ii) of this section, and the work practice standards as specified in paragraph (a)(5)(iii) of this section.



(i) You must comply with the total particulate emission limit specified in Tables 2 and 2a to this subpart beginning on June 10, 1999 or at startup, whichever is later.

(ii) You must comply with the mercury emission limit specified in Table 2a to this subpart beginning on **[date one year after the date of publication of the final rule in the Federal Register]**.

(iii) You must comply with the hydrogen fluoride work practice standards specified in Table 2a to this subpart beginning on **[date of publication of the final rule in the Federal Register]**.

(6) For each new rock calciner that commences construction or reconstruction after **[date of publication of the final rule in the Federal Register]**, you must comply with the emission limits and work practices standards specified in Table 2a to this subpart immediately upon startup.

(b) For each existing and new purified phosphoric acid process line, you must comply with the provisions of subpart H of this part and maintain:

(1) A 30-day rolling average of daily concentration measurements of methyl isobutyl ketone equal to or below 20 parts per million by weight (ppmw) for each product acid stream.

(2) A 30-day rolling average of daily concentration measurements of methyl isobutyl ketone equal to or below 30 ppmw for each raffinate stream.

(3) The daily average temperature of the exit gas stream from the chiller stack below 50 degrees Fahrenheit.

(c) You must not introduce into any existing or new evaporative cooling tower any liquid effluent from any wet scrubbing device installed to control emissions from process equipment.

(d) For each existing gypsum dewatering stack or cooling pond that commenced construction or reconstruction on or before **[date of publication of the final rule in the Federal Register]**, you must prepare, and operate in accordance with, a gypsum dewatering stack and cooling pond management plan that contains the information specified in paragraph (f) of this section beginning on **[date one year after the date of publication of the final rule in the Federal Register]**.

(e) For each new gypsum dewatering stack or cooling pond that commences construction or reconstruction after **[date of publication of the final rule in the Federal Register]**, you must prepare, and operate in accordance with, a gypsum dewatering stack and cooling pond management plan that contains the information specified in paragraph (f) of this section beginning

on **[date of publication of the final rule in the Federal Register]**.

(f) The gypsum dewatering stack and cooling pond management plan must include the information specified in paragraphs (f)(1) through (3) of this section.

(1) Location and size (i.e., current total footprint acreage) of each closed gypsum dewatering stack, active gypsum dewatering stack, and cooling pond.

(2) Control techniques that are used to minimize hydrogen fluoride and fugitive dust emissions from exposed surface areas of each active gypsum dewatering stack and cooling pond. For each active gypsum dewatering stack and cooling pond that commenced construction or reconstruction on or before **[date of publication of the final rule in the Federal Register]**, you must use, and include in the management plan, at least one of the control techniques listed in paragraphs (f)(2)(i) through (vi) of this section. For each active gypsum dewatering stack and cooling pond that commences construction or reconstruction after **[date of publication of the final rule in the Federal Register]**, you must use, and include in the management plan, at least two of the control techniques listed in paragraphs (f)(2)(i) through (vi) of this section.

(i) Submerge the discharge pipe along with any necessary siphon breaks to a level below the surface of the cooling pond

or the surface of the pond associated with the active gypsum dewatering stack.

(ii) Minimize the surface area of the active gypsum dewatering stack by using a rim ditch (cell) building technique or other building technique.

(iii) Wet the active gypsum dewatering stack during hot or dry periods.

(iv) Apply slaked lime to the active gypsum dewatering stack surfaces.

(v) Apply soil caps and vegetation to all side slopes of the active gypsum dewatering stack up to 50 feet below the stack top.

(vi) Close the active gypsum dewatering stack such that it meets the definition of a closed gypsum dewatering stack specified in § 63.601.

(3) You must conduct calculations and maintain a record of the calculations to demonstrate compliance with the ratio requirement specified in paragraph (g) of this section.

(g) After [**date of publication of the final rule in the Federal Register**], whenever a facility commences construction of a new gypsum dewatering stack, the ratio of total active gypsum dewatering stack area (i.e., sum of the footprint acreage of all active gypsum dewatering stacks combined) to annual phosphoric acid manufacturing capacity must not be greater than 80 acres

per 100,000 tons of annual phosphoric acid manufacturing capacity (equivalent  $P_2O_5$  feed).

(h) To demonstrate compliance with any emission limits specified in paragraph (a) of this section during periods of startup and shutdown, you must begin operation of any control device(s) being used at the affected source prior to introducing any feed into the affected source. You must continue operation of the control device(s) through the shutdown period until all feed material has been processed through the affected source.

**§ 63.603 [Reserved]**

**§ 63.604 [Reserved]**

**§ 63.605 Operating and monitoring requirements.**

(a) For each wet-process phosphoric acid process line or superphosphoric acid process line subject to the provisions of this subpart, you must comply with the monitoring requirements specified in paragraphs (a)(1) and (2) of this section.

(1) Install, calibrate, maintain, and operate a continuous monitoring system (CMS) according to your site-specific monitoring plan specified in § 63.608(c). The CMS must have an accuracy of  $\pm 5$  percent over its operating range and must determine and permanently record the mass flow of phosphorus-bearing material fed to the process.

(2) Maintain a daily record of equivalent  $P_2O_5$  feed. Calculate the equivalent  $P_2O_5$  feed by determining the total mass

rate, in metric ton/hour of phosphorus bearing feed, using the monitoring system specified in paragraph (a)(1) of this section and the procedures specified in § 63.606(f)(3).

(b) For each phosphate rock dryer or phosphate rock calciner subject to the provisions of this subpart, you must comply with the monitoring requirements specified in paragraphs (b)(1) through (3) of this section.

(1) Install, calibrate, maintain, and operate a CMS according to your site-specific monitoring plan specified in § 63.608(c). The CMS must have an accuracy of  $\pm 5$  percent over its operating range and must determine and permanently record either:

(i) The mass flow of phosphorus-bearing feed material to the phosphate rock dryer or calciner, or

(ii) The mass flow of product from the phosphate rock dryer or calciner.

(2) Maintain the records specified in paragraphs (b)(2)(i) and (ii) of this section.

(i) If you monitor the mass flow of phosphorus-bearing feed material to the phosphate rock dryer or calciner as specified in paragraph (b)(1)(i) of this section, maintain a daily record of phosphate rock feed by determining the total mass rate in metric tons/hour of phosphorus-bearing feed.

(ii) If you monitor the mass flow of product from the phosphate rock dryer or calciner as specified in paragraph (b)(1)(ii) of this section, maintain a daily record of product by determining the total mass rate in metric ton/hour of product.

(3) For each phosphate rock calciner, you must comply with the requirements in paragraphs (b)(3)(i) and (ii) of this section.

(i) The CMS must continuously measure and permanently record the calcination temperature of the phosphate rock calciner every 15 minutes.

(ii) You must comply with the applicable calibration and quality control requirements for temperature specified in Table 5 to this subpart.

(c) For each purified phosphoric acid process line, you must comply with the monitoring requirements specified in paragraphs (c)(1) and (2) of this section.

(1) Install, calibrate, maintain, and operate a CMS according to your site-specific monitoring plan specified in § 63.608(c). The CMS must continuously measure and permanently record the stack gas exit temperature for each chiller stack.

(2) Measure and record the concentration of methyl isobutyl ketone in each product acid stream and each raffinate stream once each day.

(d) If you use a control device(s) to comply with the emission limits specified in Table 1 or 2 of this subpart, or to comply with the emission limits or work practice standards specified in Table 1a or 2a of this subpart, you must install a continuous parameter monitoring system (CPMS) and comply with the requirements specified in paragraphs (d)(1) through (5) of this section.

(1) You must monitor the operating parameter(s) applicable to the control device that you use as specified in Table 3 to this subpart and establish the applicable limit or range for the operating parameter limit as specified in paragraphs (d)(1)(i) through (iii) of this section, as applicable.

(i) Except as specified in paragraphs (d)(1)(ii) and (iii) of this section, determine the value(s) as the arithmetic average of operating parameter measurements recorded during with the three test runs conducted for the most recent performance test.

(ii) For any absorber required by the work practice standards for phosphate rock calciners in Table 1a or 2a of this subpart, you must determine the value(s) based on an engineering assessment. The engineering assessment may include, but is not limited to, manufacturer's specifications and recommendations and/or a design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or



chemical laws or properties. Examples of analytical methods include, but are not limited to, the use of material balances based on process stoichiometry and estimation of maximum flow rate based on physical equipment design such as pump or blower capacities.

(iii) If you use an absorber or a wet electrostatic precipitator to comply with the emission limits in Table 1, 1a, 2, or 2a to this subpart and you monitor pressure drop across each absorber or secondary voltage for a wet electrostatic precipitator, you must establish allowable ranges using the methodology specified in paragraphs (d)(1)(iii)(A) and (B) of this section.

(A) The allowable range for the daily averages of the pressure drop across an absorber, or secondary voltage for a wet electrostatic precipitator, is  $\pm 20$  percent of the baseline average value determined in paragraph (d)(1)(i) of this section. The Administrator retains the right to reduce the  $\pm 20$  percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable emissions standard. However, the adjustment must not be reduced to less than  $\pm 10$  percent under any instance.

(B) As an alternative to paragraph (d)(1)(iii)(A) of this section, you may establish, and provide to the Administrator for

approval, allowable ranges for the daily averages of the pressure drop across an absorber, or secondary voltage for an electrostatic precipitator, for the purpose of assuring compliance with this subpart. You must establish the allowable ranges based on the baseline average values recorded during previous performance tests, or the results of performance tests conducted specifically for the purposes of this paragraph. You must conduct all performance tests using the methods specified in § 63.606. You must certify that the control devices and processes have not been modified since the date of the performance test from which you obtained the data used to establish the allowable ranges. You must request and obtain approval of the Administrator for changes to the allowable ranges. When a source using the methodology of this paragraph is retested, you must determine new allowable ranges of baseline average values unless the retest indicates no change in the operating parameters outside the previously established ranges.

(2) You must monitor, record, and demonstrate continuous compliance using the minimum frequencies specified in Table 4 to this subpart.

(3) You must comply with the calibration and quality control requirements that are applicable to the operating parameter(s) you monitor as specified in Table 5 to this subpart.

(4) If you use a non-regenerative adsorption system to achieve the mercury emission limits specified in Table 1a or 2a to this subpart, you must comply with the requirements specified in paragraph (e) of this section.

(5) If you use a sorbent injection system to achieve the mercury emission limits specified in Table 1a or 2a to this subpart and you use a fabric filter to collect the associated particulate matter, the system must meet the requirements for fabric filters specified in paragraph (f) of this section.

(e) If you use a non-regenerative adsorption system to achieve the mercury emission limits specified in Table 1a or 2a to this subpart, you must comply with the requirements specified in paragraphs (e)(1) through (3) of this section.

(1) Determine the adsorber bed life (i.e., the expected life of the sorbent in the adsorption system) using the procedures specified in paragraphs (e)(1)(i) through (iv) of this section.

(i) If the adsorber bed is expected (designed) to have a life of less than 2 years, determine the outlet concentration of mercury on a quarterly basis until breakthrough occurs for the first three adsorber bed change-outs. The adsorber bed life shall equal the average length of time between each of the three change-outs.

(ii) If the adsorber bed is expected (designed) to have a life of 2 years or greater, determine the outlet concentration of mercury on a semi-annual basis until breakthrough occurs for the first two adsorber bed change-outs. The adsorber bed life must equal the average length of time between each of the two change-outs.

(iii) If more than one adsorber is operated in parallel, or there are several identical operating lines controlled by adsorbers, you may determine the adsorber bed life by measuring the outlet concentration of mercury from one of the adsorbers or adsorber systems rather than determining the bed life for each adsorber.

(iv) The adsorber or adsorber system you select for the adsorber bed life test must have the highest expected inlet gas mercury concentration and the highest operating rate of any adsorber in operation at the affected source. During the test to determine adsorber bed life, you must use the fuel that contains the highest level of mercury in any fuel-burning unit associated with the adsorption system being tested.

(2) You must replace the sorbent in each adsorber on or before the end of the adsorbent bed life, calculated in paragraph (e)(1) of this section.

(3) You must re-establish the adsorber bed life if the sorbent is replaced with a different brand or type, or if any

process changes are made that would lead to a shorter bed lifetime.

(f) If you use a fabric filter system to comply with the emission limits specified in Table 1, 1a, 2, or 2a to this subpart, the fabric filter must be equipped with a bag leak detection system that is installed, calibrated, maintained, and continuously operated according to the requirements in paragraphs (f)(1) through (10) of this section.

(1) Install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent, or compartment (e.g., for a positive-pressure fabric filter) of the fabric filter.

(2) Use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 milligram per actual cubic meter (0.00044 grains per actual cubic feet) or less.

(3) Use a bag leak detection system equipped with a device to continuously record the output signal from the system sensor.

(4) Use a bag leak detection system equipped with a system that will trigger an alarm when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located such that the alert is observed readily by plant operating personnel.

(5) Install a bag leak detection system in each compartment or cell for positive-pressure fabric filter systems that do not duct all compartments or cells to a common stack. Install a bag leak detector downstream of the fabric filter if a negative-pressure or induced-air filter system is used. If multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(6) Calibration of the bag leak detection system must, at a minimum, consist of establishing the baseline output level by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.

(7) After initial adjustment, you must not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as established in your site-specific monitoring plan required in § 63.608(c). In no event may the sensitivity be increased more than 100 percent or decreased by more than 50 percent over a 365-day period unless such adjustment follows a complete inspection of the fabric filter system that demonstrates that the system is in good operating condition.

(8) Operate and maintain each fabric filter and bag leak detection system such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. If the alarm sounds more than 5 percent of the operating time during a

6-month period, it is considered an operating parameter exceedance. Calculate the alarm time (i.e., time that the alarm sounds) as specified in paragraphs (f)(8)(i) through (iii) of this section.

(i) If inspection of the fabric filter demonstrates that corrective action is not required, the alarm duration is not counted in the alarm time calculation.

(ii) If corrective action is required, each alarm time is counted as a minimum of 1 hour.

(iii) If it takes longer than 1 hour to initiate corrective action, each alarm time is counted as the actual amount of time taken to initiate corrective action.

(9) If the alarm on a bag leak detection system is triggered, you must initiate procedures within 1 hour of an alarm to identify the cause of the alarm and then initiate corrective action, as specified in § 63.608(d)(2), no later than 48 hours after an alarm. Failure to take these actions within the prescribed time periods is considered a violation.

(10) Retain records of any bag leak detection system alarm, including the date, time, duration, and the percent of the total operating time during each 6-month period that the alarm sounds, with a brief explanation of the cause of the alarm, the corrective action taken, and the schedule and duration of the corrective action.

(g) If you choose to directly monitor mercury emissions instead of using CPMS as specified in paragraph (d) of this section, then you must install and operate a mercury CEMS in accordance with Performance Specification 12A of appendix B to part 60 of this chapter, or a sorbent trap-based integrated monitoring system in accordance with Performance Specification 12B of appendix B to part 60 of this chapter. You must continuously monitor mercury emissions as specified in paragraphs (g)(1) through (4) of this section.

(1) The span value for any mercury CEMS must include the intended upper limit of the mercury concentration measurement range during normal operation, which may be exceeded during other short-term conditions lasting less than 24 consecutive operating hours. However, the span should be at least equivalent to approximately two times the emissions standard. You may round the span value to the nearest multiple of 10 micrograms per cubic meter of total mercury.

(2) You must operate and maintain each mercury CEMS or sorbent trap-based integrated monitoring system according to the quality assurance requirements specified in Procedure 5 of appendix F to part 60 of this chapter.

(3) You must conduct relative accuracy testing of mercury monitoring systems, as specified in Performance Specification



12A, Performance Specification 12B, or Procedure 5 of appendix B to part 60 of this chapter, at normal operating conditions.

(4) If you use a mercury CEMS, you must install, operate, calibrate, and maintain an instrument for continuously measuring and recording the exhaust gas flow rate to the atmosphere according to your site-specific monitoring plan specified in § 63.608(c).

**§ 63.606 Performance tests and compliance provisions.**

(a) You must conduct an initial performance test to demonstrate compliance with the applicable emission limits specified in Tables 1, 1a, 2, and 2a to this subpart, on or before the applicable compliance date specified in § 63.602.

(b) After you conduct the initial performance test specified in paragraph (a) of this section, you must conduct an annual performance test no more than 13 months after the date the previous performance test was conducted.

(c) For affected sources (as defined in § 63.600) that have not operated since the previous annual performance test was conducted and more than 1 year has passed since the previous performance test, you must conduct a performance test no later than 180 days after the re-start of the affected source according to the applicable provisions in § 63.7(a)(2).

(d) You must conduct the performance tests specified in this section at maximum representative operating conditions for

the process. Maximum representative operating conditions means process operating conditions that are likely to recur and that result in the flue gas characteristics that are the most difficult for reducing emissions of the regulated pollutant(s) by the control device used. The most difficult condition for the control device may include, but is not limited to, the highest HAP mass loading rate to the control device or the highest HAP mass loading rate of constituents that approach the limits of solubility for scrubbing media. Operations during startup, shutdown, and malfunction do not constitute representative operating conditions for purposes of conducting a performance test. You must record the process information that is necessary to document the operating conditions during the test and include in such record an explanation to support that such conditions represent maximum representative operating conditions. Upon request, you must make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(e) In conducting all performance tests, you must use as reference methods and procedures the test methods in 40 CFR part 60, appendix A, or other methods and procedures as specified in this section, except as provided in § 63.7(f).

(f) You must determine compliance with the applicable total fluorides standards or hydrogen fluoride standards specified in

Tables 1, 1a, 2, and 2a to this subpart as specified in paragraphs (f)(1) through (3) of this section.

(1) Compute the emission rate (E) of total fluorides or hydrogen fluoride for each run using Equation AA-1:

$$E = \left( \sum_{i=1}^N C_i Q_i \right) / (PK) \quad (\text{Eq. AA-1})$$

Where:

- E = Emission rate of total fluorides or hydrogen fluoride, gram/metric ton (pound/ton) of equivalent P<sub>2</sub>O<sub>5</sub> feed.
- C<sub>i</sub> = Concentration of total fluorides or hydrogen fluoride from emission point "i," milligram/dry standard cubic meter (milligram/dry standard cubic feet).
- Q<sub>i</sub> = Volumetric flow rate of effluent gas from emission point "i," dry standard cubic meter/hour (dry standard cubic feet/hour).
- N = Number of emission points associated with the affected facility.
- P = Equivalent P<sub>2</sub>O<sub>5</sub> feed rate, metric ton/hour (ton/hour).
- K = Conversion factor, 1000 milligram/gram (453,600 milligram/pound).

(2) You must use the test methods and procedures as specified in paragraphs (f)(2)(i) or (ii) of this section.

(i) You must use Method 13A or 13B (40 CFR part 60, appendix A) to determine the total fluorides concentration (C<sub>i</sub>) and the volumetric flow rate (Q<sub>i</sub>) of the effluent gas at each emission point. The sampling time for each run at each emission point must be at least 60 minutes. The sampling volume for each

run at each emission point must be at least 0.85 dscm (30 dscf). If Method 13B is used, the fusion of the filtered material described in Section 7.3.1.2 and the distillation of suitable aliquots of containers 1 and 2, described in section 7.3.3 and 7.3.4 in Method 13 A, may be omitted.

(ii) You must use Method 320 at 40 CFR part 63, appendix A to determine the hydrogen fluoride concentration ( $C_i$ ) at each emission point. The sampling time for each run at each emission point must be at least 60 minutes. You must use Method 2 at 40 CFR part 60, Appendix A-1 to determine the volumetric flow rate ( $Q_i$ ) of the effluent gas from each of the emission points.

(3) Compute the equivalent  $P_2O_5$  feed rate ( $P$ ) using Equation AA-2:

$$P = M_p R_p \quad (\text{Eq. AA-2})$$

Where:

$P$  =  $P_2O_5$  feed rate, metric ton/hr (ton/hour).

$M_p$  = Total mass flow rate of phosphorus-bearing feed, metric ton/hour (ton/hour).

$R_p$  =  $P_2O_5$  content, decimal fraction.

(i) Determine the mass flow rate ( $M_p$ ) of the phosphorus-bearing feed using the measurement system described in § 63.605(a).

(ii) Determine the  $P_2O_5$  content ( $R_p$ ) of the feed using, as appropriate, the following methods specified in Methods Used and

Adopted By The Association of Florida Phosphate Chemists

(Seventh Edition, 1991) where applicable:

(A) Section IX, Methods of Analysis for Phosphate Rock, No. 1 Preparation of Sample (incorporated by reference, see § 63.14).

(B) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method A-Volumetric Method (incorporated by reference, see § 63.14).

(C) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method B-Gravimetric Quimociac Method (incorporated by reference, see § 63.14).

(D) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method C-Spectrophotometric Method (incorporated by reference, see § 63.14).

(E) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method A-Volumetric Method (incorporated by reference, see § 63.14).

(F) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method B-Gravimetric Quimociac Method (incorporated by reference, see § 63.14).

(G) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates,

No. 3 Total Phosphorus- $P_2O_5$ , Method C-Spectrophotometric Method  
(incorporated by reference, see § 63.14).

(g) You must demonstrate compliance with the applicable particulate matter standards specified in Tables 1, 1a, 2, and 2a to this subpart as specified in paragraphs (g)(1) through (3) of this section.

(1) Compute the emission rate (E) of particulate matter for each run using Equation AA-3:

$$E = (C Q) / (P K) \quad (\text{Eq. AA-3})$$

Where:

- E = Emission rate of particulate matter, kilogram/megagram (pound/ton) of phosphate rock feed.
- C = Concentration of particulate matter, gram/dry standard cubic meter (gram/dry standard cubic feet).
- Q = Volumetric flow rate of effluent gas, dry standard cubic meter/hour (dry standard cubic feet/hour).
- P = Phosphate rock feed rate, megagram/hour (ton/hour).
- K = Conversion factor, 1000 grams/kilogram (453.6 grams/pound).

(2) Use Method 5 at 40 CFR part 60, appendix A-3 to determine the particulate matter concentration (C) and volumetric flow rate (Q) of the effluent gas. Except as specified in paragraph (h) of this section, the sampling time and sample volume for each run must be at least 60 minutes and 0.85 dry standard cubic meter (30 dry standard cubic feet).

(3) Use the CMS described in § 63.605(b) to determine the phosphate rock feed rate (P) for each run.

(h) To demonstrate compliance with the particulate matter standards for phosphate rock calciners specified in Tables 1, 1a, 2, or 2a to this subpart, you must use Method 5 at 40 CFR part 60, appendix A-3 to determine the particulate matter concentration. The sampling volume for each test run must be at least 1.70 dry standard cubic meter.

(i) To demonstrate compliance with the mercury emission standards for phosphate rock calciners specified in Table 1a or 2a to this subpart, you must use Method 30B at 40 CFR part 60, appendix A-8 to determine the mercury concentration, unless you use a CEMS to demonstrate compliance. If you use a non-regenerative adsorber to control mercury emissions, you must use this test method to determine the expected bed life as specified in § 63.605(e)(1).

(j) If you choose to monitor the mass flow of product from the phosphate rock dryer or calciner as specified in § 63.605(b)(1)(ii), you must either:

(1) Simultaneously monitor the feed rate and output rate of the phosphate rock dryer or calciner during the performance test, or

(2) Monitor the output rate and the input and output moisture contents of the phosphate rock dryer or calciner during

the performance test and calculate the corresponding phosphate rock dryer or calciner input rate.

(k) For sorbent injection systems, you must conduct the performance test at the outlet of the fabric filter used for sorbent collection. You must monitor and record operating parameter values for the fabric filter during the performance test. If the sorbent is replaced with a different brand or type of sorbent than was used during the performance test, you must conduct a new performance test.

(l) If you use a mercury CEMS as specified in § 63.605(g), or paragraph (i) of this section, you must demonstrate initial compliance based on the first 30 operating days during which you operate the affected source using a CEMS. You must obtain hourly mercury concentration and stack gas volumetric flow rate data.

(m) If you use a CMS, you must conduct a performance evaluation, as specified in § 63.8(e), in accordance with your site-specific monitoring plan in § 63.608(c). For fabric filters, you must conduct a performance evaluation of the bag leak detection system consistent with the guidance provided in Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, EPA-454/R-98-015, September 1997 (incorporated by reference, see § 63.14). You must record the sensitivity of the bag leak detection system to detecting



changes in particulate matter emissions, range, averaging period, and alarm set points during the performance test.

**§ 63.607 Notification, recordkeeping, and reporting requirements.**

(a) You must comply with the notification requirements specified in § 63.9. You must also notify the Administrator each time that the operating limits change based on data collected during the most recent performance test. When a source is retested and the performance test results are submitted to the Administrator pursuant to paragraph (b) (1) of this section, § 63.7(g) (1), or § 63.10(d) (2), you must indicate whether the operating range is based on the new performance test or the previously established range. Upon establishment of a new operating range, you must thereafter operate under the new range. If the Administrator determines that you did not conduct the compliance test in accordance with the applicable requirements or that the ranges established during the performance test do not represent normal operations, you must conduct a new performance test and establish new operating ranges.

(b) You must comply with the reporting and recordkeeping requirements in § 63.10 as specified in paragraphs (b) (1) through (b) (5) of this section.

(1) You must comply with the general recordkeeping requirements in § 63.10(b)(1).

(2) As required by § 63.10(d), you must report the results of the initial and subsequent performance tests as part of the notification of compliance status required in § 63.9(h). You must verify in the performance test reports that the operating limits for each process have not changed or provide documentation of revised operating limits established according to § 63.605, as applicable. In the notification of compliance status, you must also:

(i) Certify to the Administrator annually that you have complied with the evaporative cooling tower requirements specified in § 63.602(c).

(ii) Submit analyses and supporting documentation demonstrating conformance with the Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, EPA-454/R-98-015, September 1997 (incorporated by reference, see § 63.14) and specifications for bag leak detection systems as part of the notification of compliance status report.

(iii) Submit the gypsum dewatering stack and cooling pond management plan specified in § 63.602(f).

(iv) If you elect to demonstrate compliance by following the procedures in § 63.605(d)(1)(iii)(B), certify to the

Administrator annually that the control devices and processes have not been modified since the date of the performance test from which you obtained the data used to establish the allowable ranges.

(v) Each time a gypsum dewatering stack is closed, certify to the Administrator within 90 days of closure, that the final cover of the closed gypsum dewatering stack is a drought resistant vegetative cover that includes a barrier soil layer that will sustain vegetation.

(vi) If you operate a phosphate rock calciner, include the engineering assessment as required by §63.605(d)(1)(ii) and the information in paragraphs (b)(2)(vi)(A) through (D) of this section.

(A) Description of the monitoring devices and monitoring frequencies.

(B) The established operating limits of the monitored parameter(s).

(C) The rationale for the established operating limit, including any data and calculations used to develop the operating limit and a description of why the operating limit indicates proper operation of the control device.

(D) The rationale used to determine which format to use for your operating limit (e.g., operating range, minimum operating

level or maximum operating level), where this subpart does not specify which format to use.

(3) As required by § 63.10(e)(3), you must submit an excess emissions report for any exceedance of an emission limit, work practice standard, or operating parameter limit if the total duration of the exceedances for the reporting period is 1 percent of the total operating time for the reporting period or greater. The report must contain the information specified in § 63.10 and paragraph (b)(4) of this section. When exceedances of an emission limit or operating parameter have not occurred, you must include such information in the report. You must submit the report semiannually and the report must be delivered or postmarked by the 30th day following the end of the calendar half. If you report exceedances, you must submit the excess emissions report quarterly until a request to reduce reporting frequency is approved as described in § 63.10(e)(3)(ii).

(4) In the event that an affected unit fails to meet an applicable standard, record and report the following information for each failure:

(i) The date, time and duration of the failure.

(ii) A list of the affected sources or equipment for which a failure occurred.

(iii) An estimate of the volume of each regulated pollutant emitted over any emission limit.

(iv) A description of the method used to estimate the emissions.

(v) A record of actions taken to minimize emissions in accordance with § 63.608(b), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(5) You must submit a summary report containing the information specified in § 63.10(e)(3)(vi). You must submit the summary report semiannually and the report must be delivered or postmarked by the 30th day following the end of the calendar half.

(c) Your records must be in a form suitable and readily available for expeditious review. You must keep each record for 5 years following the date of each recorded action. You must keep each record on site, or accessible from a central location by computer or other means that instantly provides access at the site, for at least 2 years after the date of each recorded action. You may keep the records off site for the remaining 3 years.

(d) In computing averages to determine compliance with this subpart, you must exclude the monitoring data specified in paragraphs (d)(1) through (2) of this section.

(1) Periods of non-operation of the process unit;

(2) Periods of no flow to a control device; and any monitoring data recorded during CEMS or continuous parameter monitoring system (CPMS) breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable), and high-level adjustments.

(e) Within 60 days after the date of completing each performance test (as defined in §63.2), you must submit the results of the performance tests, including any associated fuel analyses, required by this subpart according to the methods specified in paragraphs (e)(1) or (2) of this section.

(1) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (<http://www.epa.gov/ttn/chief/ert/index.html>), you must submit the results of the performance test to the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through the EPA's Central Data Exchange (CDX) ([http://cdx.epa.gov/epa\\_home.asp](http://cdx.epa.gov/epa_home.asp)), unless the Administrator approves another approach. Performance test data must be submitted in a file format generated through the use of the EPA's ERT. Owners or operators, who claim that some of the information being submitted for performance tests is confidential business information (CBI), must submit a complete

file generated through the use of the EPA's ERT, including information claimed to be CBI, on a compact disk, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph.

(2) For any performance test conducted using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in §63.13.

(f) Within 60 days after the date of completing each CEMS performance evaluation (as defined in §63.2), you must submit the results of the performance evaluation according to the method specified by either paragraph (f)(1) or (f)(2) of this section.

(1) For data collection of relative accuracy test audit (RATA) pollutants that are supported by the EPA's ERT as listed on the EPA's ERT Web site, you must submit the results of the performance evaluation to the CEDRI that is accessed through the EPA's CDX, unless the Administrator approves another approach. Performance evaluation data must be submitted in a file format

generated through the use of the EPA's ERT. If you claim that some of the performance evaluation information being transmitted is CBI, you must submit a complete file generated through the use of the EPA's ERT, including information claimed to be CBI, on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) by registered letter to the EPA. The compact disk shall be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph.

(2) For any performance evaluations with RATA pollutants that are not supported by the EPA's ERT as listed on the EPA's ERT Web site, you shall submit the results of the performance evaluation to the Administrator at the appropriate address listed in §63.13.

**§ 63.608 General requirements and applicability of part 63 general provisions.**

(a) You must comply with the general provisions in subpart A of this part as specified in appendix A to this subpart.

(b) At all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with



safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved.

Determination by the Administrator of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(c) For each CMS (including CEMS or CPMS) used to demonstrate compliance with any applicable emission limit or work practice, you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan according to the requirements specified in paragraphs (c)(1) through (3) of this section. You must submit the site-specific monitoring plan, if requested by the Administrator, at least 60 days before the initial performance evaluation of the CMS. The requirements of this paragraph also apply if a petition is made to the Administrator for alternative monitoring parameters under § 63.8(f).

(1) You must include the information specified in paragraphs (c)(1)(i) through (vi) of this section in the site-specific monitoring plan.

(i) Location of the CMS sampling probe or other interface. You must include a justification demonstrating that the sampling probe or other interface is at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device).

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems.

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

(iv) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1)(ii), (c)(3), (c)(4)(ii), and Table 4 to this subpart.

(v) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d)(1) and (2) and Table 5 to this subpart.

(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c), (e)(1), and (e)(2)(i).

(2) You must include a schedule for conducting initial and subsequent performance evaluations in the site-specific monitoring plan.

(3) You must keep the site-specific monitoring plan on site for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If you revise the site-specific monitoring plan, you must keep previous (i.e., superseded) versions of the plan on site to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. You must include the program of corrective action required under §63.8(d)(2) in the plan.

(d) For each bag leak detection system installed to comply with the requirements specified in § 63.605(f), you must include the information specified in paragraphs (d)(1) and (2) of this section in the site-specific monitoring plan specified in paragraph (c) of this section.

(1) Performance evaluation procedures and acceptance criteria (e.g., calibrations), including how the alarm set point will be established.

(2) A corrective action plan describing corrective actions to be taken and the timing of those actions when the bag leak detection alarm sounds. Corrective actions may include, but are

not limited to, the actions specified in paragraphs (d)(2)(i) through (vi) of this section.

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in regulated material emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective fabric filter compartment.

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(vi) Shutting down the process controlled by the fabric filter.

**§ 63.609 [Reserved]**

**§ 63.610 Exemption from new source performance standards.**

Any affected source subject to the provisions of this subpart is exempted from any otherwise applicable new source performance standard contained in 40 CFR part 60, subpart T, subpart U, or subpart NN. To be exempt, a source must have a current operating permit pursuant to title V of the Clean Air Act and the source must be in compliance with all requirements of this subpart. For each affected source, this exemption is effective upon the date that you demonstrate to the

Administrator that the requirements of §§ 63.605 and 63.606 have been met.

**§ 63.611 Implementation and enforcement.**

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable state, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a state, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a state, local, or Tribal agency.

(b) The authorities specified in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and cannot be delegated to State, local, or Tribal agencies.

(1) Approval of alternatives to the requirements in §§ 63.600, 63.602, 63.605, and 63.610.

(2) Approval of requests under §§ 63.7(e)(2)(ii) and 63.7(f) for alternative requirements or major changes to the test methods specified in this subpart, as defined in §63.90.

(3) Approval of requests under §63.8(f) for alternative requirements or major changes to the monitoring requirements specified in this subpart, as defined in §63.90.

(4) Waiver or approval of requests under § 63.10(f) for alternative requirements or major changes to the recordkeeping and reporting requirements specified in this subpart, as defined in § 63.90.

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

**Table 1 to Subpart AA of Part 63—Existing Source Phase 1 Emission Limits<sup>a,b</sup>**

For the following existing sources...	You must meet the emission limits for the specified pollutant...			
	Total Fluorides	Hydrogen Fluoride	Total Particulate	Mercury
Wet-Process Phosphoric Acid Line	0.020 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--	--
Superphosphoric Acid Process Line	0.010 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--	--
Superphosphoric Acid Submerged Line with a Submerged Combustion Process	0.20 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--	--
Phosphate Rock Dryer	--	--	0.2150 lb/ton of phosphate rock feed	--
Phosphate Rock Calciner	--	--	0.181 g/dscm	--

<sup>a</sup> The phase 1 existing source compliance date is June 10, 2002.

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.602(h).

**Table 1a to Subpart AA of Part 63—Existing Source Phase 2 Emission Limits and Work Practice Standards<sup>a,b</sup>**

For the following existing sources...	You must meet the emission limits and work practice standards for the specified pollutant...			
	Total Fluorides	Hydrogen Fluoride	Total Particulate	Mercury
Wet-Process Phosphoric Acid Line	--	0.020 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--

For the following existing sources...	You must meet the emission limits and work practice standards for the specified pollutant...			
	Total Fluorides	Hydrogen Fluoride	Total Particulate	Mercury
Superphosphoric Acid Process Line	--	0.010 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--
Superphosphoric Acid Submerged Line with a Submerged Combustion Process	--	0.20 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--
Phosphate Rock Dryer	--	--	0.2150 lb/ton of phosphate rock feed	--
Phosphate Rock Calciner	--	Maintain a daily average calcination temperature below 1,600 °F, and route emissions to an absorber	0.181 g/dscm	0.014 mg/dscm @ 3% O <sub>2</sub>

<sup>a</sup> The phase 2 existing source compliance dates apply at different times for different pollutants as specified in § 63.602(a).

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.602(h).

**Table 2 to Subpart AA of Part 63—New Source Phase 1 Emission Limits<sup>a,b</sup>**

For the following new sources...	You must meet the emissions limits for the specified pollutant...			
	Total Fluorides	Hydrogen Fluoride	Total Particulate	Mercury
Wet-Process Phosphoric Acid Line	0.0135 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--	--
Superphosphoric Acid Process Line	0.00870 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--	--
Phosphate Rock Dryer	--	--	0.060 lb/ton of phosphate rock feed	--
Phosphate Rock Calciner	--	--	0.092 g/dscm	--

<sup>a</sup> The phase 1 new source compliance dates are based on date of construction or reconstruction as specified in § 63.602(a).

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.602(h).

**Table 2a to Subpart AA of Part 63—New Source Phase 2 Emission Limits and Work Practices<sup>a,b</sup>**

For the following new sources...	You must meet the emissions limits and work practice standards for the specified pollutant...			
	Total Fluorides	Hydrogen Fluoride	Total Particulate	Mercury
Wet-Process Phosphoric Acid Line	--	0.0135 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--
Superphosphoric Acid Process Line	--	0.00870 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--	--
Phosphate Rock Dryer	--	--	0.060 lb/ton of phosphate rock feed	--
Phosphate Rock Calciner	--	Maintain a daily average calcination temperature below 1,600 °F, and  route emissions to an absorber	0.092 g/dscm	0.014 mg/dscm @ 3% O <sub>2</sub>

<sup>a</sup> The phase 2 new source compliance dates are based on date of construction or reconstruction as specified in § 63.602(a).

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.602(h).

**Table 3 to Subpart AA of Part 63—Monitoring Equipment Operating Parameters**

You must...	If...	And you must monitor...	And...
<b>All Absorbers (Wet Scrubbers): Choose one of the following two options</b>			
Install a continuous parameter monitoring system (CPMS) for liquid flow at the inlet of the absorber.	You choose to monitor only the influent liquid flow, rather than the liquid-to-gas ratio.	Influent liquid flow.	--



<b>You must...</b>	<b>If...</b>	<b>And you must monitor...</b>	<b>And...</b>
Install CPMS for liquid and gas flow at the inlet of the absorber.	You choose to monitor the liquid-to-gas ratio, rather than only the influent liquid flow, and you want the ability to lower liquid flow with changes in gas flow.	Liquid-to-gas ratio as determined by dividing the influent liquid flow rate by the inlet gas flow rate. The units of measure must be consistent with those used to calculate this ratio during the performance test, or those found in the engineering assessment as specified in §63.605(d)(1)(ii), as applicable.	You must measure the gas stream by: Measuring the gas stream flow at the absorber inlet; or Using the design blower capacity, with appropriate adjustments for pressure drop.
<b>Absorbers (Wet Scrubbers): You must also choose one of the following three options</b>			
Install CPMS for pressure at the gas stream inlet and outlet of the absorber.	You choose to monitor pressure drop through the absorber, and your pressure drop through the absorber is greater than 5 inches of water.	Pressure drop through the absorber.	You may measure the pressure of the inlet gas using amperage on the blower if a correlation between pressure and amperage is established.
Install CPMS for temperature at the absorber gas stream outlet and pressure at the liquid inlet of the adsorber.	You choose to monitor exit gas temperature and inlet pressure of the liquid.	Exit gas temperature of the absorber and inlet liquid pressure of the absorber.	--
Install CPMS for temperature at the absorber gas stream outlet and absorber gas stream inlet.	You choose to monitor temperature differential across the absorber.	Exit gas temperature of the absorber and inlet gas temperature of the absorber.	--
<b>Condensers</b>			
Install a CPMS for temperature in the stack exit gas.	--	Temperature of the stack exit gas.	--
<b>Sorbent Injection</b>			
Install a CPMS for flow rate.	--	Sorbent injection rate.	--

<b>You must...</b>	<b>If...</b>	<b>And you must monitor...</b>	<b>And...</b>
Install a CPMS for flow rate.	--	Sorbent injection carrier gas flow rate.	--
<b>Wet Electrostatic Precipitators</b>			
Install secondary voltage meter	You control mercury or metal HAP (particulate matter) using an electrostatic precipitator	Secondary voltage	--

**Table 4 to Subpart AA of Part 63—Operating Parameters, Operating Limits and Data Monitoring, Recordkeeping and Compliance Frequencies**

For the operating parameter applicable to you, as specified in Table 3...	You must establish the following operating limit...	And you must monitor, record, and demonstrate continuous compliance using these minimum frequencies...		
		Data measurement	Data recording	Data averaging period for compliance
Absorbers (Wet Scrubbers)				
Influent liquid flow	Minimum inlet liquid flow	Continuous	Every 15 minutes	Daily
Influent liquid flow rate and gas stream flow rate	Minimum influent liquid-to-gas ratio	Continuous	Every 15 minutes	Daily
Pressure drop	Pressure drop range	Continuous	Every 15 minutes	Daily
Exit gas temperature	Maximum exit gas temperature	Continuous	Every 15 minutes	Daily
Inlet gas temperature	Minimum temperature difference between inlet and exit gas	Continuous	Every 15 minutes	Daily
Inlet liquid pressure	Minimum Inlet liquid pressure	Continuous	Every 15 minutes	Daily
Condensers				
Gas temperature at the exit of the condenser	Maximum outlet gas temperature	Continuous	Every 15 minutes	Daily
Sorbent Injection				
Sorbent injection rate	Minimum injection rate	Continuous	Every 15 minutes	Daily

For the operating parameter applicable to you, as specified in Table 3...	You must establish the following operating limit...	And you must monitor, record, and demonstrate continuous compliance using these minimum frequencies...		
		Data measurement	Data recording	Data averaging period for compliance
Sorbent injection carrier gas flow rate	Minimum carrier gas flow rate	Continuous	Every 15 minutes	Daily
<b>Fabric Filters</b>				
Alarm time	Maximum alarm time is not established on a site-specific basis but is specified in § 63.604(e)(1)(ix)	Continuous	Each date and time of alarm start and stop	Maximum alarm time specified in §65.604(e)(1)(ix)
<b>Wet Electrostatic Precipitator</b>				
Secondary voltage	Secondary voltage range	Continuous	Every 15 minutes	Daily

**Table 5 to Subpart AA of Part 63—Calibration and Quality Control Requirements for Continuous Parameter Monitoring System (CPMS)**

If you monitor this parameter...	Your accuracy requirements are...	And your calibration requirements are...
Temperature	<p>± 1 percent over the normal range of temperature measured or 2.8 degrees Celsius (5 degrees Fahrenheit), whichever is greater, for non-cryogenic temperature ranges.</p> <p>± 2.5 percent over the normal range of temperature measured or 2.8 degrees Celsius (5 degrees Fahrenheit), whichever is greater, for cryogenic temperature ranges.</p>	<p>Performance evaluation annually and following any period of more than 24 hours throughout which the temperature exceeded the maximum rated temperature of the sensor, or the data recorder was off scale.</p> <p>Visual inspections and checks of CPMS operation every 3 months, unless the CPMS has a redundant temperature sensor.</p> <p>Selection of a representative measurement location.</p>
Flow Rate	± 5 percent over the normal range of flow measured or 1.9 liters per minute (0.5 gallons per minute), whichever is greater, for liquid	Performance evaluation annually and following any period of more than 24 hours throughout which the flow rate exceeded the maximum rated flow rate of the

If you monitor this parameter...	Your accuracy requirements are...	And your calibration requirements are...
	<p>flow rate.</p> <p>± 5 percent over the normal range of flow measured or 280 liters per minute (10 cubic feet per minute), whichever is greater, for gas flow rate.</p> <p>± 5 percent over the normal range measured for mass flow rate.</p>	<p>sensor, or the data recorder was off scale.</p> <p>Checks of all mechanical connections for leakage monthly.</p> <p>Visual inspections and checks of CPMS operation every 3 months, unless the CPMS has a redundant flow sensor.</p> <p>Selection of a representative measurement location where swirling flow or abnormal velocity distributions due to upstream and downstream disturbances at the point of measurement are minimized.</p>
Pressure	<p>± 5 percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.</p>	<p>Checks for obstructions (e.g., pressure tap pluggage) at least once each process operating day.</p> <p>Performance evaluation annually and following any period of more than 24 hours throughout which the pressure exceeded the maximum rated pressure of the sensor, or the data recorder was off scale.</p> <p>Checks of all mechanical connections for leakage monthly. Visual inspection of all components for integrity, oxidation and galvanic corrosion every 3 months, unless the CPMS has a redundant pressure sensor.</p> <p>Selection of a representative measurement location that minimizes or eliminates pulsating</p>

If you monitor this parameter...	Your accuracy requirements are...	And your calibration requirements are...
		pressure, vibration, and internal and external corrosion.
Sorbent Injection Rate	$\pm$ 5 percent over the normal range measured.	Performance evaluation annually.  Visual inspections and checks of CPMS operation every 3 months, unless the CPMS has a redundant sensor.  Select a representative measurement location that provides measurement of total sorbent injection.
Secondary voltage	$\pm$ 1kV	---

**Appendix A to Subpart AA of Part 63—Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart AA**

40 CFR citation	Requirement	Applies to subpart AA	Comment
§ 63.1(a) (1) through (4)	General Applicability	Yes.	None.
§ 63.1(a) (5)		No	[Reserved] .
§ 63.1(a) (6)	Contact information	Yes.	None.
§ 63.1(a) (7) - (9)		No	[Reserved] .
§ 63.1(a) (10) through (12)	Time periods	Yes.	None.
§ 63.1(b)	Initial Applicability Determination	Yes.	None.
§ 63.1(c) (1)	Applicability After Standard Established	Yes.	None.
§ 63.1(c) (2)	Permits	Yes.	Some plants may be area sources.
§ 63.1(c) (3) - (4)		No	[Reserved] .
§ 63.1(c) (5)	Area to Major source change	Yes.	None.
§ 63.1(d)		No	[Reserved] .

§ 63.1(e)	Applicability of Permit Program	Yes.	None.
§ 63.2	Definitions	Yes.	Additional definitions in § 63.601.
§ 63.3	Units and Abbreviations	Yes.	None.
§ 63.4(a)(1) and (2)	Prohibited Activities	Yes.	None.
§ 63.4(a)(3) through (5)		No	[Reserved] .
§ 63.4(b) and (c)	Circumvention/Fragmentation	Yes.	None.
§ 63.5(a)	Construction/Reconstruction Applicability	Yes.	None.
§ 63.5(b)(1)	Existing, New, Reconstructed Sources Requirements	Yes.	None.
§ 63.5(b)(2)		No	[Reserved] .
§ 63.5(b)(3), (4), and (6)	Construction /Reconstruction approval and notification	Yes.	None.
§ 63.5(b)(5)		No	[Reserved]
§ 63.5(c)		No	[Reserved] .
§ 63.5(d)	Application for Approval of Construction/Reconstruction	Yes.	None.
§ 63.5(e)	Approval of Construction/Reconstruction	Yes.	None.
§ 63.5(f)	Approval of Construction/Reconstruction Based on State Review	Yes.	None.
§ 63.6(a)	Compliance with Standards and Maintenance Applicability	Yes.	None.
§ 63.6(b)(1) through (5)	New and Reconstructed Sources Dates	Yes.	See also § 63.602.
§ 63.6(b)(6)		No	[Reserved] .

§ 63.6(b) (7)	Area to major source change	Yes.	None.
§ 63.6(c) (1) and (2)	Existing Sources Dates	Yes.	§ 63.602 specifies dates.
§ 63.6(c) (3) and (4)		No	[Reserved] .
§ 63.6(c) (5)	Area to major source change	Yes.	None.
§ 63.6(d)		No	[Reserved] .
§ 63.6(e) (1) (i) and (ii)	Operation & Maintenance Requirements	No	See § 63.608(b) for general duty requirement.
§ 63.6(e) (iii)		Yes	None.
§ 63.6(e) (2)		No	[Reserved]
§ 63.6(e) (3)	Startup, Shutdown, and Malfunction Plan	No	None.
§ 63.6(f)	Compliance with Emission Standards	No	See general duty at § 63.608(b) .
§ 63.6(g)	Alternative Standard	Yes.	None.
§ 63.6(h)	Compliance with Opacity/VE Standards	No	Subpart AA does not include VE/opacity standards.
§ 63.6(i) (1) through (14)	Extension of Compliance	Yes.	None.
§ 63.6(i) (15)		No	[Reserved] .
§ 63.6(i) (16)		Yes.	None.
§ 63.6(j)	Exemption from Compliance	Yes.	None.
§ 63.7(a)	Performance Test Requirements Applicability	Yes.	None.
§ 63.7(b)	Notification	Yes.	None.
§ 63.7(c)	Quality Assurance/Test Plan	Yes.	None.
§ 63.7(d)	Testing Facilities	Yes.	None.

§ 63.7(e) (1)	Conduct of Tests; startup, shutdown, and malfunction provisions	No.	§ 63.606 specifies additional requirements.
§ 63.7(e) (2) through (4)	Conduct of Tests	Yes.	§ 63.606 specifies additional requirements.
§ 63.7(f)	Alternative Test Method	Yes.	None.
§ 63.7(g)	Data Analysis	Yes.	None.
§ 63.7(h)	Waiver of Tests	Yes.	None.
§ 63.8(a)	Monitoring Requirements Applicability	Yes.	None.
§ 63.8(b)	Conduct of Monitoring	Yes.	None.
§ 63.8(c) (1) (i)	General duty to minimize emissions and CMS operation	No	See 63.608(b) for general duty requirement.
§ 63.8(c) (1) (ii)		Yes	None.
§ 63.8(c) (1) (iii)	Requirement to develop SSM Plan for CMS	No	None.
§ 63.8(c) (2) through (4)	CMS Operation/Maintenance	Yes.	None.
§ 63.8(c) (5)	COMS Operation	No	Subpart AA does not require COMS.
§ 63.8(c) (6) through (8)	CMS requirements	Yes	None.
§ 63.8(d) (1) and (2)	Quality Control	Yes.	None.
§ 63.8(d) (3)	Written procedure for CMS	No	See § 63.608 for requirement
§ 63.8(e)	CMS Performance Evaluation	Yes	None.
§ 63.8(f) (1) through (5)	Alternative Monitoring Method	Yes.	None.
§ 63.8(f) (6)	Alternative to RATA Test	Yes	None.
§ 63.8(g) (1)	Data Reduction	Yes.	None.
§ 63.8(g) (2)		Yes	None.



§ 63.8(g) (3) through (5)		Yes.	None.
§ 63.9(a)	Notification Requirements Applicability	Yes.	None.
§ 63.9(b)	Initial Notifications	Yes.	None.
§ 63.9(c)	Request for Compliance Extension	Yes.	None.
§ 63.9(d)	New Source Notification for Special Compliance Requirements	Yes.	None.
§ 63.9(e)	Notification of Performance Test	Yes.	None.
§ 63.9(f)	Notification of VE/Opacity Test	No	Subpart AA does not include VE/opacity standards.
§ 63.9(g)	Additional CMS Notifications	Yes	Subpart AA does not require CMS performance evaluation, COMS, or CEMS.
§ 63.9(h) (1) through (3)	Notification of Compliance Status	Yes.	None.
§ 63.9(h) (4)		No	[Reserved] .
§ 63.9(h) (5) and (6)		Yes.	None.
§ 63.9(i)	Adjustment of Deadlines	Yes.	None.
§ 63.9(j)	Change in Previous Information	Yes.	None.
§ 63.10(a)	Recordkeeping/Reporting-Applicability	Yes.	None.
§ 63.10(b) (1)	General Recordkeeping Requirements	Yes.	None.
§ 63.10(b) (2) (i)	Startup or shutdown duration	No	None.
§ 63.10(b) (2) (ii)	Malfunction	No	See § 63.607 for recordkeeping and reporting requirement

§ 63.10(b)(2)(iii)	Maintenance records	Yes	None.
§ 63.10(b)(2)(iv) and (v)	Startup, shutdown, malfunction actions	No	None.
§ 63.10(b)(2)(vi) through (xiv)	General Recordkeeping Requirements	Yes	None.
§ 63.10(b)(3)	General Recordkeeping Requirements	Yes	None.
§ 63.10(c)(1)	Additional CMS Recordkeeping	Yes.	None.
§ 63.10(c)(2) through (4)		No	[Reserved] .
§ 63.10(c)(5)		Yes.	None.
§ 63.10(c)(6)		Yes	None.
§ 63.10(c)(7) and (8)		Yes	None.
§ 63.10(c)(9)		No	[Reserved] .
§ 63.10(c)(10) through (13)		Yes	None.
§ 63.10(c)(14)		Yes	None.
§ 63.10(c)(15)	Startup Shutdown Malfunction Plan Provisions	No	None.
§ 63.10(d)(1)	General Reporting Requirements	Yes.	None.
§ 63.10(d)(2)	Performance Test Results	Yes.	None.
§ 63.10(d)(3)	Opacity or VE Observations	No	Subpart AA does not include VE/opacity standards.
§ 63.10(d)(4)	Progress Reports	Yes.	None.
§ 63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	No	See § 63.607 for reporting of excess emissions
§ 63.10(e)(1) and (2)	Additional CMS Reports	Yes	None.
§ 63.10(e)(3)	Excess Emissions/CMS Performance Reports	Yes.	None.

§ 63.10(e)(4)	COMS Data Reports	No	Subpart AA does not require COMS.
§ 63.10(f)	Recordkeeping/Reporting Waiver	Yes.	None.
§ 63.11	Control Device and Work Practice Requirements	Yes.	None.
§ 63.12	State Authority and Delegations	Yes.	None.
§ 63.13	Addresses	Yes.	None.
§ 63.14	Incorporation by Reference	Yes.	None.
§ 63.15	Information Availability/Confidentiality	Yes.	None.
§ 63.16	Performance Track Provisions	No	Terminated

21. Part 63 is amended by revising subpart BB to read as follows:

**Subpart BB—National Emission Standards for Hazardous Air**

**Pollutants from Phosphate Fertilizers Production Plants**

**Sec.**

63.620 Applicability.

63.621 Definitions.

63.622 Standards and compliance dates.

63.623 [Reserved]

63.624 [Reserved]

63.625 Operating and monitoring requirements.

63.626 Performance tests and compliance provisions.

63.627 Notification, recordkeeping, and reporting requirements.

63.628 General requirements and applicability of part 63 general provisions.

63.629 Miscellaneous requirements.

63.630 [Reserved]

63.631 Exemption from new source performance standards.

63.632 Implementation and enforcement.

Table 1 to Subpart BB of Part 63—Existing Source Phase 1 Emission Limits

Table 1a to Subpart BB of Part 63—Existing Source Phase 2  
Emission Limits

Table 2 to Subpart BB of Part 63—New Source Phase 1 Emission  
Limits

Table 2a to Subpart BB of Part 63—New Source Phase 2 Emission  
Limits

Table 3 to Subpart BB of Part 63—Monitoring Equipment Operating  
Parameters

Table 4 to Subpart BB of Part 63—Operating Parameters, Operating  
Limits and Data Monitoring, Recordkeeping and Compliance  
Frequencies

Table 5 to Subpart BB of Part 63—Calibration and Quality Control  
Requirements for Continuous Parameter Monitoring Systems (CPMS)

Appendix A to Subpart BB of Part 63—Applicability of General  
Provisions (40 CFR Part 63, Subpart A) to Subpart BB

**§ 63.620 Applicability.**

(a) Except as provided in paragraphs (c) and (d) of this section, you are subject to the requirements of this subpart if you own or operate a phosphate fertilizer production plant that is a major source as defined in § 63.2. You must comply with the emission limitations, work practice standards, and operating parameter requirements specified in this subpart at all times.

(b) The requirements of this subpart apply to emissions of hazardous air pollutants (HAP) emitted from the following affected sources at a phosphate fertilizer production plant:

(1) Each diammonium and/or monoammonium phosphate process line and any process line that produces a reaction product of ammonia and phosphoric acid.

(2) Each granular triple superphosphate process line.

(3) Each granular triple superphosphate storage building.

(c) The requirements of this subpart do not apply to a phosphate fertilizer production plant that is an area source as defined in § 63.2.

(d) The provisions of this subpart do not apply to research and development facilities as defined in § 63.621.

**§ 63.621 Definitions.**

Terms used in this subpart are defined in § 63.2 of the Clean Air Act and in this section as follows:

Diammonium and/or monoammonium phosphate process line means any process line manufacturing granular diammonium and/or monoammonium phosphate by reacting ammonia with phosphoric acid that has been derived from or manufactured by reacting phosphate rock and acid. A diammonium and/or monoammonium phosphate process line includes, but is not limited to: reactors, granulators, dryers, coolers, cooling towers, screens, and mills.

Equivalent  $P_2O_5$  feed means the quantity of phosphorus, expressed as phosphorus pentoxide ( $P_2O_5$ ), fed to the process.

Equivalent  $P_2O_5$  stored means the quantity of phosphorus, expressed as phosphorus pentoxide, being cured or stored in the affected facility.

Exceedance means a departure from an indicator range established for monitoring under this subpart, consistent with

any averaging period specified for averaging the results of the monitoring.

Existing source depends on the date that construction or reconstruction of an affected source commenced. A process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), granular triple superphosphate process line, or granular triple superphosphate storage is an existing source if construction or reconstruction of the affected source commenced on or before December 27, 1996.

Fresh granular triple superphosphate means granular triple superphosphate produced within the preceding 72 hours.

Phosphate fertilizer process line or production plant means any process line or production plant that manufactures a phosphate fertilizer by reacting phosphoric acid with ammonia.

Granular triple superphosphate process line means any process line, not including storage buildings, that manufactures granular triple superphosphate by reacting phosphate rock with phosphoric acid. A granular triple superphosphate process line includes, but is not limited to: mixers, curing belts (dens), reactors, granulators, dryers, coolers, cooling towers, screens, and mills.

Granular triple superphosphate storage building means any building curing or storing fresh granular triple superphosphate.

A granular triple superphosphate storage building includes, but is not limited to: storage or curing buildings, conveyors, elevators, screens, and mills.

New source depends on the date that construction or reconstruction of an affected source commences. A process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), granular triple superphosphate process line, or granular triple superphosphate storage is a new source if construction or reconstruction of the affected source commenced after December 27, 1996.

Research and development facility means research or laboratory operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and where the facility is not engaged in the manufacture of products for commercial sale in commerce or other off-site distribution, except in a de minimis manner.

Total fluorides means elemental fluorine and all fluoride compounds, including the HAP hydrogen fluoride, as measured by reference methods specified in 40 CFR part 60, appendix A, Method 13 A or B, or by equivalent or alternative methods approved by the Administrator pursuant to §63.7(f).

**§ 63.622 Standards and compliance dates.**

(a) On and after the date on which the initial performance test specified in §§ 63.7 and 63.626 is required to be completed, for each process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), granular triple superphosphate process line, and granular triple superphosphate storage building, you must comply with the emission limits as specified in paragraphs (a)(1) through (3) of this section. If a process line contains more than one emission point, you must sum the emissions from all emission points in a process line to determine compliance with the specified emission limits.

(1) For each existing process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), granular triple superphosphate process line, and granular triple superphosphate storage building that commenced construction or reconstruction on or before December 27, 1996, you must comply with the emission limits specified in Table 1 to this subpart beginning on June 10, 2002 and ending on **[date one year after the date of publication of the final rule in the Federal Register]**.

Beginning on **[date one year after the date of publication of the final rule in the Federal Register]**, the emission limits specified in Table 1 to this subpart no longer apply, and you



must comply with the emission limits specified in Table 1a to this subpart.

(2) For each new process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), granular triple superphosphate process line, and granular triple superphosphate storage building that commences construction or reconstruction after December 27, 1996 and on or before **[date of publication of the final rule in the Federal Register]**, you must comply with the emission limits specified in Table 2 to this subpart beginning at startup or on June 10, 1999, whichever is later, and ending on **[date one year after the date of publication of the final rule in the Federal Register]**. Beginning on **[date one year after the date of publication of the final rule in the Federal Register]**, the emission limits specified in Table 2 to this subpart no longer apply, and you must comply with the emission limits specified in Table 2a to this subpart beginning on **[date one year after the date of publication of the final rule in the Federal Register]** or immediately upon startup, whichever is later.

(3) For each new process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), granular triple superphosphate process line, and granular triple superphosphate

storage building that commences construction or reconstruction after **[date of publication of the final rule in the Federal Register]**, you must comply with the emission limits specified in Table 2a to this subpart immediately upon startup.

(b) You must not ship fresh granular triple superphosphate from your granular triple superphosphate storage building.

(c) You must not introduce into any evaporative cooling tower any liquid effluent from any wet scrubbing device installed to control emissions from process equipment.

(d) To demonstrate compliance with any emission limits specified in paragraph (a) of this section during periods of startup and shutdown, you must begin operation of any control device(s) being used at the affected source prior to introducing any feed into the affected source. You must continue operation of the control device(s) through the shutdown period until all feed material has been processed through the affected source.

**§ 63.623 [Reserved]**

**§ 63.624 [Reserved]**

**§ 63.625 Operating and monitoring requirements.**

(a) For each process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), or granular triple superphosphate process line subject to the provisions of this

subpart, you must comply with the monitoring requirements specified in paragraphs (a)(1) and (2) of this section.

(1) Install, calibrate, maintain, and operate a continuous monitoring system (CMS) according to your site-specific monitoring plan specified in § 63.628(c). The CMS must have an accuracy of  $\pm 5$  percent over its operating range and must determine and permanently record the mass flow of phosphorus-bearing material fed to the process.

(2) Maintain a daily record of equivalent  $P_2O_5$  feed. Calculate the equivalent  $P_2O_5$  feed by determining the total mass rate in metric ton/hour of phosphorus bearing feed using the procedures specified in § 63.626(f)(3).

(b) For each granular triple superphosphate storage building subject to the provisions of this subpart, you must maintain an accurate record of the mass of granular triple superphosphate in storage to permit the determination of the amount of equivalent  $P_2O_5$  stored.

(c) For each granular triple superphosphate storage building subject to the provisions of this subpart, you must comply with the requirements specified in paragraphs (c)(1) and (2) of this section.

(1) Maintain a daily record of total equivalent  $P_2O_5$  stored by multiplying the percentage  $P_2O_5$  content, as determined by § 63.626(f)(3)(ii), by the total mass of granular triple

superphosphate stored as specified in paragraph (b) of this section.

(2) Develop for approval by the Administrator a site-specific methodology including sufficient recordkeeping for the purposes of demonstrating compliance with § 63.622(b).

(d) If you use a control device(s) to comply with the emission limits specified in Tables 1, 1a, 2, or 2a of this subpart, you must install a continuous parameter monitoring system (CPMS) and comply with the requirements specified in paragraphs (d)(1) through (4) of this section.

(1) You must monitor the operating parameter(s) applicable to the control device that you use as specified in Table 3 to this subpart and establish the applicable limit or range for the operating parameter limit as specified in paragraphs (d)(1)(i) and (ii) of this section, as applicable.

(i) Except as specified in paragraph (d)(1)(ii) of this section, determine the value(s) as the arithmetic average of operating parameter measurements recorded during with the three test runs conducted for the most recent performance test.

(ii) If you use an absorber to comply with the emission limits in Table 1, 1a, 2, or 2a to this subpart and you monitor pressure drop across each absorber, you must establish allowable ranges using the methodology specified in paragraphs (d)(1)(ii)(A) and (B) of this section.

(A) The allowable range for the daily averages of the pressure drop across each absorber is  $\pm 20$  percent of the baseline average value determined in paragraph (d)(1)(i) of this section. The Administrator retains the right to reduce the  $\pm 20$  percent adjustment to the baseline average values of operating ranges in those instances where performance test results indicate that a source's level of emissions is near the value of an applicable emissions standard. However, the adjustment must not be reduced to less than  $\pm 10$  percent under any instance.

(B) As an alternative to paragraph (d)(1)(ii)(A) of this section, you may establish, and provide to the Administrator for approval, allowable ranges for the daily averages of the pressure drop across an absorber for the purpose of assuring compliance with this subpart. You must establish the allowable ranges based on the baseline average values recorded during previous performance tests or the results of performance tests conducted specifically for the purposes of this paragraph. You must conduct all performance tests using the methods specified in § 63.626. You must certify that the control devices and processes have not been modified since the date of the performance test from which you obtained the data used to establish the allowable ranges. You must request and obtain approval of the Administrator for changes to the allowable ranges. When a source using the methodology of this paragraph is

retested, you must determine new allowable ranges of baseline average values unless the retest indicates no change in the operating parameters outside the previously established ranges.

(2) You must monitor, record, and demonstrate continuous compliance using the minimum frequencies specified in Table 4 to this subpart.

(3) You must comply with the calibration and quality control requirements that are applicable to the operating parameter(s) you monitor as specified in Table 5 to this subpart.

(4) If you use a fabric filter system to comply with the emission limits specified in Table 1, 1a, 2, or 2a to this subpart, the system must meet the requirements for fabric filters specified in paragraph (e) of this section.

(e) If you use a fabric filter system to comply with the emission limits specified in Table 1, 1a, 2, or 2a to this subpart, the fabric filter must be equipped with a bag leak detection system that is installed, calibrated, maintained and continuously operated according to the requirements in paragraphs (e)(1) through (10) of this section.

(1) Install a bag leak detection sensor(s) in a position(s) that will be representative of the relative or absolute particulate matter loadings for each exhaust stack, roof vent,

or compartment (e.g., for a positive-pressure fabric filter) of the fabric filter.

(2) Use a bag leak detection system certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 1 milligram per actual cubic meter (0.00044 grains per actual cubic feet) or less.

(3) Use a bag leak detection system equipped with a device to continuously record the output signal from the system sensor.

(4) Use a bag leak detection system equipped with a system that will trigger an alarm when an increase in relative particulate material emissions over a preset level is detected. The alarm must be located such that the alert is observed readily by plant operating personnel.

(5) Install a bag leak detection system in each compartment or cell for positive-pressure fabric filter systems that do not duct all compartments or cells to a common stack. Install a bag leak detector downstream of the fabric filter if a negative-pressure or induced-air filter is used. If multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

(6) Calibration of the bag leak detection system must, at a minimum, consist of establishing the baseline output level by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time.

(7) After initial adjustment, you must not adjust the sensitivity or range, averaging period, alarm set points or alarm delay time, except as established in your site-specific monitoring plan required in § 63.628(c). In no event may the sensitivity be increased more than 100 percent or decreased by more than 50 percent over a 365-day period unless such adjustment follows a complete inspection of the fabric filter system that demonstrates that the system is in good operating condition.

(8) Operate and maintain each fabric filter and bag leak detection system such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. If the alarm sounds more than 5 percent of the operating time during a 6-month period, it is considered an operating parameter exceedance. Calculate the alarm time (i.e., time that the alarm sounds) as specified in paragraphs (e)(8)(i) through (iv) of this section.

(i) If inspection of the fabric filter demonstrates that corrective action is not required, the alarm duration is not counted in the alarm time calculation.

(ii) If corrective action is required, each alarm time is counted as a minimum of 1 hour.

(iii) If it takes longer than 1 hour to initiate corrective action, each alarm time (i.e., time that the alarm sounds) is



counted as the actual amount of time taken by you to initiate corrective action.

(9) If the alarm on a bag leak detection system is triggered, you must initiate procedures within 1 hour of an alarm to identify the cause of the alarm and then initiate corrective action, as specified in § 63.628(d)(2), no later than 48 hours after an alarm. Failure to take these actions within the prescribed time periods is considered a violation.

(10) Retain records of any bag leak detection system alarm, including the date, time, duration, and the percent of the total operating time during each 6-month period that the alarm triggers, with a brief explanation of the cause of the alarm, the corrective action taken, and the schedule and duration of the corrective action.

**§ 63.626 Performance tests and compliance provisions.**

(a) You must conduct an initial performance test to demonstrate compliance with the emission limits specified in Tables 1, 1a, 2, and 2a to this subpart, on or before the applicable compliance date specified in § 63.622.

(b) After you conduct the initial performance test specified in paragraph (a) of this section, you must conduct an annual performance test no more than 13 months after the date the previous performance test was conducted.

(c) For affected sources (as defined in § 63.620) that have not operated since the previous annual performance test was conducted and more than 1 year has passed since the previous performance test, you must conduct a performance test no later than 180 days after the re-start of the affected source according to the applicable provisions in § 63.7(a)(2).

(d) You must conduct the performance tests specified in this section at maximum representative operating conditions for the process. Maximum representative operating conditions means process operating conditions that are likely to recur and that result in the flue gas characteristics that are the most difficult for reducing emissions of the regulated pollutant(s) by the control device used. The most difficult condition for the control device may include, but is not limited to, the highest HAP mass loading rate to the control device or the highest HAP mass loading rate of constituents that approach the limits of solubility for scrubbing media. Operations during startup, shutdown, and malfunction do not constitute representative operating conditions for purposes of conducting a performance test. You must record the process information that is necessary to document the operating conditions during the test and include in such record an explanation to support that such conditions represent maximum representative operating conditions. Upon request, you must make available to the Administrator such

records as may be necessary to determine the conditions of performance tests.

(e) In conducting all performance tests, you must use as reference methods and procedures the test methods in 40 CFR part 60, appendix A, or other methods and procedures as specified in this section, except as provided in § 63.7(f).

(f) For each process line that produces a reaction product of ammonia and phosphoric acid (e.g., diammonium and/or monoammonium phosphate process line), and granular triple superphosphate process line, you must determine compliance with the applicable total fluorides or hydrogen fluoride standards specified in Tables 1, 1a, 2, and 2a to this subpart as specified in paragraphs (f)(1) through (3) of this section.

(1) Compute the emission rate (E) of total fluorides or hydrogen fluoride for each run using Equation BB-1:

$$E = \left( \sum_{i=1}^N C_i Q_i \right) / (PK) \quad (\text{Eq. BB-1})$$

Where:

- E = Emission rate of total fluorides or hydrogen fluoride, gram/metric ton (pound/ton) of equivalent P<sub>2</sub>O<sub>5</sub> feed.
- C<sub>i</sub> = Concentration of total fluorides or hydrogen fluoride from emission point "i," milligram/dry standard cubic meter (milligram/dry standard cubic feet).
- Q<sub>i</sub> = Volumetric flow rate of effluent gas from emission point "i," dry standard cubic meter/hour (dry standard cubic feet/hour).

- N = Number of emission points associated with the affected facility.
- P = Equivalent  $P_2O_5$  feed rate, metric ton/hour (ton/hour).
- K = Conversion factor, 1000 milligram/gram (453,600 milligram/pound).

(2) You must use the test methods and procedures as specified in paragraphs (f)(2)(i) or (f)(2)(ii) of this section.

(i) You must use Method 13A or 13B (40 CFR part 60, appendix A) to determine the total fluorides concentration ( $C_i$ ) and the volumetric flow rate ( $Q_i$ ) of the effluent gas at each emission point. The sampling time for each run at each emission point must be at least 60 minutes. The sampling volume for each run at each emission point must be at least 0.85 dscm (30 dscf). If Method 13B is used, the fusion of the filtered material described in Section 7.3.1.2 and the distillation of suitable aliquots of containers 1 and 2, described in section 7.3.3 and 7.3.4 in Method 13 A, may be omitted.

(ii) You must use Method 320 at 40 CFR part 63, appendix A to determine the hydrogen fluoride concentration ( $C_i$ ) at each emission point. The sampling time for each run at each emission point must be at least 60 minutes. You must use Method 2 at 40 CFR part 60, Appendix A-1 to determine the volumetric flow rate ( $Q_i$ ) of the effluent gas from each of the emission points.

(3) Compute the equivalent  $P_2O_5$  feed rate (P) using Equation BB-2:

$$P = M_p R_p \quad (\text{Eq. BB-2})$$

Where:

$P$  =  $P_2O_5$  feed rate, metric ton/hour (ton/hour).

$M_p$  = Total mass flow rate of phosphorus-bearing feed, metric ton/hour (ton/hour).

$R_p$  =  $P_2O_5$  content, decimal fraction.

(i) Determine the mass flow rate ( $M_p$ ) of the phosphorus-bearing feed using the measurement system described in § 63.625 (a).

(ii) Determine the  $P_2O_5$  content ( $R_p$ ) of the feed using, as appropriate, the following methods specified in the Book of Methods Used and Adopted By The Association of Florida Phosphate Chemists (Seventh Edition, 1991) where applicable:

(A) Section IX, Methods of Analysis for Phosphate Rock, No. 1 Preparation of Sample (incorporated by reference, see § 63.14).

(B) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method A-Volumetric Method (incorporated by reference, see § 63.14).

(C) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method B-Gravimetric Quimociac Method (incorporated by reference, see § 63.14).

(D) Section IX, Methods of Analysis for Phosphate Rock, No. 3 Phosphorus- $P_2O_5$  or  $Ca_3(PO_4)_2$ , Method C-Spectrophotometric Method (incorporated by reference, see § 63.14).

(E) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method A—Volumetric Method (incorporated by reference, see § 63.14).

(F) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method B—Gravimetric Quimociac Method (incorporated by reference, see § 63.14).

(G) Section XI, Methods of Analysis for Phosphoric Acid, Superphosphate, Triple Superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method C—Spectrophotometric Method (incorporated by reference, see § 63.14).

(g) For each granular triple superphosphate storage building, you must determine compliance with the applicable total fluorides or hydrogen fluoride standards specified in Tables 1, 1a, 2, and 2a to this subpart as specified in paragraphs (g)(1) through (7) of this section.

(1) You must conduct performance tests only when the following quantities of product are being cured or stored in the facility:

(i) Total granular triple superphosphate is at least 10 percent of the building capacity, and

(ii) Fresh granular triple superphosphate is at least six percent of the total amount of granular triple superphosphate, or

(iii) If the provision in paragraph (g)(1)(ii) of this section exceeds production capabilities for fresh granular triple superphosphate, the fresh granular triple superphosphate is equal to at least 5 days maximum production.

(2) Compute the emission rate (E) of total fluorides or hydrogen fluoride for each run using Equation BB-3:

$$E = \left( \sum_{i=1}^N C_i Q_i \right) / (PK) \quad (\text{Eq. BB-3})$$

Where:

E = Emission rate of total fluorides or hydrogen fluoride, gram/hour/metric ton (pound/hour/ton) of equivalent P<sub>2</sub>O<sub>5</sub> stored.

C<sub>i</sub> = Concentration of total fluorides or hydrogen fluoride from emission point "i," milligram/ dry standard cubic meter (milligram/ dry standard cubic feet).

Q<sub>i</sub> = Volumetric flow rate of effluent gas from emission point "i," dry standard cubic meter/hour (dry standard cubic feet /hour).

N = Number of emission points in the affected facility.

P = Equivalent P<sub>2</sub>O<sub>5</sub> stored, metric tons (tons).

K = Conversion factor, 1000 milligram/gram (453,600 milligram/pound).

(3) You must use the test methods and procedures as specified in paragraphs (g)(3)(i) or (g)(3)(ii) of this section.

(i) You must use Method 13A or 13B (40 CFR part 60, appendix A) to determine the total fluorides concentration ( $C_i$ ) and the volumetric flow rate ( $Q_i$ ) of the effluent gas at each emission point. The sampling time for each run at each emission point must be at least 60 minutes. The sampling volume for each run at each emission point must be at least 0.85 dscm (30 dscf). If Method 13B is used, the fusion of the filtered material described in Section 7.3.1.2 and the distillation of suitable aliquots of containers 1 and 2, described in section 7.3.3 and 7.3.4 in Method 13A, may be omitted.

(ii) You must use Method 320 at 40 CFR part 63, appendix A, to determine the hydrogen fluoride concentration ( $C_i$ ) at each emission point. The sampling time for each run must be at least 60 minutes. You must use Method 2 at 40 CFR part 60, Appendix A-1 to determine the volumetric flow rate ( $Q_i$ ) of the effluent gas from each of the emission points.

(4) Compute the equivalent  $P_2O_5$  stored (P) using Equation BB-4:

$$P = M_p R_p \quad (\text{Eq. BB-4})$$

Where:

P =  $P_2O_5$  stored (ton).

$M_p$  = Amount of product in storage, metric ton (ton).

$R_p$  =  $P_2O_5$  content of product in storage, weight fraction.



(5) Determine the amount of product ( $M_p$ ) in storage using the measurement system described in § 63.625(b) and (c).

(6) Determine the  $P_2O_5$  content ( $R_p$ ) of the product stored using, as appropriate, the following methods specified in the Book of Methods Used and Adopted By The Association of Florida Phosphate Chemists, Seventh Edition 1991, where applicable:

(i) Section XI, Methods of Analysis For Phosphoric Acid, Superphosphate, Triple superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method A-Volumetric Method (incorporated by reference, see § 63.14).

(ii) Section XI, Methods of Analysis For Phosphoric Acid, Superphosphate, Triple superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method B-Gravimetric Quimociac Method (incorporated by reference, see § 63.14).

(iii) Section XI, Methods of Analysis For Phosphoric Acid, Superphosphate, Triple superphosphate, and Ammonium Phosphates, No. 3 Total Phosphorus- $P_2O_5$ , Method C-Spectrophotometric Method (incorporated by reference, see § 63.14), or,

(7) Determine the  $P_2O_5$  content ( $R_p$ ) of the product stored using, as appropriate, the following methods specified in the Official Methods of Analysis of AOAC International, Sixteenth edition, 1995, where applicable:

(i) AOAC Official Method 957.02 Phosphorus (Total) In Fertilizers, Preparation of Sample Solution, Sixteenth edition, 1995, (incorporated by reference, see § 63.14).

(ii) AOAC Official Method 929.01 Sampling of Solid Fertilizers, Sixteenth edition, 1995, (incorporated by reference, see § 63.14).

(iii) AOAC Official Method 929.02 Preparation of Fertilizer Sample, Sixteenth edition, (incorporated by reference, see § 63.14).

(iv) AOAC Official Method 978.01 Phosphorus (Total) in Fertilizers, Automated Method, Sixteenth edition, 1995 (incorporated by reference, see § 63.14).

(v) AOAC Official Method 969.02 Phosphorus (Total) in Fertilizers, Alkalimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995 (incorporated by reference, see § 63.14).

(vi) AOAC Official Method 962.02 Phosphorus (Total) in Fertilizers, Gravimetric Quinolinium Molybdophosphate Method, Sixteenth edition, 1995 (incorporated by reference, see § 63.14).

(vii) AOAC Official Method 958.01 Phosphorus (Total) in Fertilizers, Spectrophotometric Molybdovanadophosphate Method, Sixteenth edition, 1995 (incorporated by reference, see § 63.14).

(h) If you use a CMS, you must conduct a performance evaluation, as specified in § 63.8(e), in accordance with your site-specific monitoring plan in § 63.628(c). For fabric filters, you must conduct a performance evaluation of the bag leak detection system consistent with the guidance provided in Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, EPA-454/R-98-015, September 1997 (incorporated by reference, see § 63.14). You must record the sensitivity of the bag leak detection system to detecting changes in particulate matter emissions, range, averaging period, and alarm set points during the performance test.

**§ 63.627 Notification, recordkeeping, and reporting requirements.**

(a) You must comply with the notification requirements specified in § 63.9. You must also notify the Administrator each time that the operating limits change based on data collected during the most recent performance test. When a source is retested and the performance test results are submitted to the Administrator pursuant to paragraph (b)(1) of this section, § 63.7(g)(1), or § 63.10(d)(2), you must indicate whether the operating range will be based on the new performance test or the previously established range. Upon establishment of a new operating range, you must thereafter operate under the new range. If the Administrator determines that you did not conduct

the compliance test in accordance with the applicable requirements or that the ranges established during the performance test do not represent normal operations, you must conduct a new performance test and establish new operating ranges.

(b) You must comply with the reporting and recordkeeping requirements in § 63.10 as specified in paragraphs (b) (1) through (5) of this section.

(1) You must comply with the general recordkeeping requirements in § 63.10(b) (1); and

(2) As required by § 63.10(d), you must report the results of the initial and subsequent performance tests as part of the notification of compliance status required in § 63.9(h). You must verify in the performance test reports that the operating limits for each process have not changed or provide documentation of revised operating limits established according to § 63.625, as applicable. In the notification of compliance status, you must also:

(i) Certify to the Administrator that you have not shipped fresh granular triple superphosphate from an affected facility.

(ii) Certify to the Administrator annually that you have complied with the evaporative cooling tower requirements specified in § 63.622(c).

(iii) Submit analyses and supporting documentation demonstrating conformance with the Office Of Air Quality Planning And Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, EPA-454/R-98-015, September 1997 (incorporated by reference, see § 63.14) and specifications for bag leak detection systems as part of the notification of compliance status report.

(iv) If you elect to demonstrate compliance by following the procedures in §63.625(d)(1)(ii)(B), certify to the Administrator annually that the control devices and processes have not been modified since the date of the performance test from which you obtained the data used to establish the allowable ranges.

(3) As required by § 63.10(e)(1), you must submit an excess emissions report for any exceedance of an emission or operating parameter limit if the total duration of the exceedances for the reporting period is 1 percent of the total operating time for the reporting period or greater. The report must contain the information specified in § 63.10 and paragraph (b)(4) of this section. When exceedances of an emission limit or operating parameter have not occurred, you must include such information in the report. You must submit the report semiannually and the report must be delivered or postmarked by the 30th day following the end of the calendar half. If exceedances are reported, you

must submit the excess emissions report quarterly until a request to reduce reporting frequency is approved as described in § 63.10(e)(3).

(4) In the event that an affected unit fails to meet an applicable standard, record and report the following information for each failure:

(i) The date, time and duration of the failure.

(ii) A list of the affected sources or equipment for which a failure occurred.

(iii) An estimate of the volume of each regulated pollutant emitted over any emission limit.

(iv) A description of the method used to estimate the emissions.

(v) A record of actions taken to minimize emissions in accordance with §63.628(b), and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

(5) You must submit a summary report containing the information specified in § 63.10(e)(3)(vi). You must submit the summary report semiannually and the report must be delivered or postmarked by the 30th day following the end of the calendar half.

(c) Your records must be in a form suitable and readily available for expeditious review. You must keep each record for

5 years following the date of each recorded action. You must keep each record on site, or accessible from a central location by computer or other means that instantly provide access at the site, for at least 2 years after the date of each recorded action. You may keep the records off site for the remaining 3 years.

(d) In computing averages to determine compliance with this subpart, you must exclude the monitoring data specified in paragraphs (d)(1) through (3) of this section.

(1) Periods of non-operation of the process unit;

(2) Periods of no flow to a control device; and

(3) Any monitoring data recorded during continuous parameter monitoring system (CPMS) breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable), and high-level adjustments.

(e) Within 60 days after the date of completing each performance test (as defined in §63.2), you must submit the results of the performance tests, including any associated fuel analyses, required by this subpart according to the methods specified in paragraphs (e)(1) or (2) of this section.

(1) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT

Web site (<http://www.epa.gov/ttn/chief/ert/index.html>), you must submit the results of the performance test to the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through the EPA's Central Data Exchange (CDX) ([http://cdx.epa.gov/epa\\_home.asp](http://cdx.epa.gov/epa_home.asp)), unless the Administrator approves another approach. Performance test data must be submitted in a file format generated through the use of the EPA's ERT. Owners or operators, who claim that some of the information being submitted for performance tests is confidential business information (CBI), must submit a complete file generated through the use of the EPA's ERT, including information claimed to be CBI, on a compact disk, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to the EPA via CDX as described earlier in this paragraph.

(2) For any performance test conducted using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site, the owner or operator shall submit the results of the performance test to the Administrator at the appropriate address listed in §63.13.



**§ 63.628 General requirements and applicability of part 63 general provisions.**

(a) You must comply with the general provisions in subpart A of this part as specified in appendix A to this subpart.

(b) At all times, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved.

Determination by the Administrator of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(c) For each CMS used to demonstrate compliance with any applicable emission limit, you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan according to the requirements specified in paragraphs (c)(1) through (3) of this section. You must submit the site-specific monitoring plan, if requested by the

Administrator, at least 60 days before the initial performance evaluation of the CMS. The requirements of this paragraph also apply if a petition is made to the Administrator for alternative monitoring parameters under § 63.8(f).

(1) You must include the information specified in paragraphs (c)(1)(i) through (vi) of this section in the site-specific monitoring plan.

(i) Location of the CMS sampling probe or other interface. You must include a justification demonstrating that the sampling probe or other interface is at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device).

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems.

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

(iv) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1)(ii), (c)(3), (c)(4)(ii), and Table 4 to this subpart.

(v) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d)(1) and (2) and Table 5 to this subpart.

(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §§ 63.10(c), 63.10(e)(1), and 63.10(e)(2)(i).

(2) You must include a schedule for conducting initial and subsequent performance evaluations in the site-specific monitoring plan.

(3) You must keep the site-specific monitoring plan on site for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If you revise the site-specific monitoring plan, you must keep previous (i.e., superseded) versions of the plan on site to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. You must include the program of corrective action required under §63.8(d)(2) in the plan.

(d) For each bag leak detection system installed to comply with the requirements specified in § 63.625(e), you must include the information specified in paragraphs (d)(1) and (2) of this section in the site-specific monitoring plan specified in paragraph (c) of this section.

(1) Performance evaluation procedures and acceptance criteria (e.g., calibrations), including how the alarm set-point will be established.

(2) A corrective action plan describing corrective actions to be taken and the timing of those actions when the bag leak detection alarm sounds. Corrective actions may include, but are not limited to, the actions specified in paragraphs (d)(2)(i) through (vi) of this section.

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other conditions that may cause an increase in regulated material emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective fabric filter compartment.

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(vi) Shutting down the process controlled by the fabric filter.

**§ 63.629 Miscellaneous requirements.**

The Administrator retains the authority to approve site-specific test plans for uncontrolled granular triple superphosphate storage buildings developed pursuant to § 63.7(c)(2)(i).

**§ 63.630 [Reserved]**

**§ 63.631 Exemption from new source performance standards.**

Any affected source subject to the provisions of this subpart is exempted from any otherwise applicable new source performance standard contained in 40 CFR part 60, subpart V, subpart W, or subpart X. To be exempt, a source must have a current operating permit pursuant to title V of the Clean Air Act and the source must be in compliance with all requirements of this subpart. For each affected source, this exemption is effective upon the date that you demonstrate to the Administrator that the requirements of §§ 63.625 and 63.626 have been met.

**§ 63.632 Implementation and enforcement.**

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable state, local, or Tribal agency. If the U.S. EPA Administrator has delegated authority to a state, local, or Tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a state, local, or Tribal agency.

(b) The authorities specified in paragraphs (b)(1) through (5) of this section are retained by the Administrator of U.S. EPA and cannot be delegated to State, local, or Tribal agencies.

(1) Approval of alternatives to the requirements in §§ 63.620, 63.622, 63.625, 63.629, and 63.631.

(2) Approval of requests under §§ 63.7(e)(2)(ii) and 63.7(f) for alternative requirements or major changes to the test methods specified in this subpart, as defined in § 63.90.

(3) Approval of requests under §63.8(f) for alternative requirements or major changes to the monitoring requirements specified in this subpart, as defined in §63.90.

(4) Waiver or approval of requests under § 63.10(f) for alternative requirements or major changes to the recordkeeping and reporting requirements specified in this subpart, as defined in § 63.90.

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

**Table 1 to Subpart BB of Part 63—Existing Source Phase 1 Emission Limits<sup>a,b</sup>**

For the following existing sources...	You must meet the emission limits for the specified pollutant...	
	Total Fluorides	Hydrogen Fluoride
Process Line that Produces a Reaction Product Of Ammonia And Phosphoric Acid (e.g., Diammonium and/or Monoammonium Phosphate Process Line)	0.060 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--
Granular Triple Superphosphate Process Line	0.150 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--
GTSP storage building	5.0×10 <sup>-4</sup> lb/hr/ton of equivalent P <sub>2</sub> O <sub>5</sub> stored	--

<sup>a</sup> The phase 1 existing source compliance date is June 10, 2002.

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.622(d).

**Table 1a to Subpart BB of Part 63—Existing Source Phase 2 Emission Limits<sup>a,b</sup>**

For the following existing sources...	You must meet the emission limits for the specified pollutant...	
	Total Fluorides	Hydrogen Fluoride
Process Line that Produces a Reaction Product Of Ammonia And Phosphoric Acid (e.g., Diammonium and/or Monoammonium Phosphate Process Line)	--	0.060 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed
Granular Triple Superphosphate Process Line	--	0.150 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed
GTSP storage building	--	5.0×10 <sup>-4</sup> lb/hr/ton of equivalent P <sub>2</sub> O <sub>5</sub> stored

<sup>a</sup> The phase 2 existing source compliance date is [date one year after the date of publication of the final rule in the Federal Register] or immediately upon startup, whichever is later.

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.622(d).

**Table 2 to Subpart BB of Part 63—New Source Phase 1 Emission Limits<sup>a,b</sup>**

For the following new sources...	You must meet the emission limits for the specified pollutant...	
	Total Fluorides	Hydrogen Fluoride
Process Line that Produces a Reaction Product Of Ammonia And Phosphoric Acid (e.g., Diammonium and/or Monoammonium Phosphate Process Line)	0.0580 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--
Granular Triple Superphosphate Process Line	0.1230 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed	--
GTSP storage building	5.0×10 <sup>-4</sup> lb/hr/ton of equivalent P <sub>2</sub> O <sub>5</sub> stored	--

<sup>a</sup> The phase 1 new source compliance dates are based on date of construction or reconstruction as specified in § 63.622(a).

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.622(d).

**Table 2a to Subpart BB of Part 63—New Source Phase 2 Emission Limits<sup>a,b</sup>**

For the following new sources...	You must meet the emission limits for the specified pollutant...	
	Total Fluorides	Hydrogen Fluoride
Process Line that Produces a Reaction Product Of Ammonia And Phosphoric Acid (e.g., Diammonium and/or Monoammonium Phosphate Process Line)	--	0.0580 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed
Granular Triple Superphosphate Process Line	--	0.1230 lb/ton of equivalent P <sub>2</sub> O <sub>5</sub> feed
GTSP storage building	--	5.0×10 <sup>-4</sup> lb/hr/ton of equivalent P <sub>2</sub> O <sub>5</sub> stored

<sup>a</sup> The phase 2 new source compliance dates are based on date of construction or reconstruction as specified in § 63.622(a).

<sup>b</sup> During periods of startup and shutdown, for emission limits stated in terms of pounds of pollutant per ton of feed, you are subject to the work practice standards specified in § 63.622(d).

**Table 3 to Subpart BB of Part 63—Monitoring Equipment Operating Parameters**

You must...	If...	And you must monitor...	And...
<b>All Absorbers (Wet Scrubbers): Choose one of the following two options</b>			
Install a continuous parameter monitoring system (CPMS) for liquid flow at the inlet of the absorber.	You choose to monitor only the influent liquid flow, rather than the liquid-to-gas ratio.	Influent liquid flow.	--
Install CPMS for liquid and gas flow at the inlet of the absorber.	You choose to monitor the liquid-to-gas ratio, rather than only the influent liquid flow, and you want the ability to lower liquid flow with changes in gas flow.	Liquid-to-gas ratio as determined by dividing the influent liquid flow rate by the inlet gas flow rate. The units of measure must be consistent with those used to calculate this ratio during the performance test.	You must measure the gas stream by: Measuring the gas stream flow at the absorber inlet; or Using the design blower capacity, with appropriate adjustments for pressure drop



You must...	If...	And you must monitor...	And...
<b>All Absorbers (Wet Scrubbers): Choose one of the following two options</b>			
<b>Absorbers (Wet Scrubbers): You must also choose one of the following three options</b>			
Install CPMS for pressure at the gas stream inlet and outlet of the absorber.	You choose to monitor pressure drop through the absorber, and your pressure drop through the absorber is greater than 5 inches of water.	Pressure drop through the absorber.	You may measure the pressure of the inlet gas using amperage on the blower if a correlation between pressure and amperage is established
Install CPMS for temperature at the absorber gas stream outlet and pressure at the liquid inlet of the adsorber	You choose to monitor outlet temperature and inlet pressure of the liquid.	Exit gas temperature of the absorber and inlet liquid pressure of the absorber	--
Install CPMS for temperature at the absorber gas stream outlet and absorber gas stream inlet	You choose to monitor temperature differential across the absorber.	Exit gas temperature of the absorber and inlet gas temperature of the absorber	--

**Table 4 to Subpart BB of Part 63—Operating Parameters, Operating Limits and Data Monitoring, Recordkeeping and Compliance Frequencies**

For the operating parameter applicable to you, as specified in Table 3...	You must establish the following operating limit during your performance test...	And you must monitor, record, and demonstrate continuous compliance using these minimum frequencies.		
		Data measurement	Data recording	Data averaging period for compliance
Absorbers (Wet Scrubbers)				
Influent liquid flow	Minimum inlet liquid flow	Continuous	Every 15 minutes	Daily
Influent liquid flow rate and gas stream flow rate	Minimum influent liquid-to-gas ratio	Continuous	Every 15 minutes	Daily
Pressure drop	Pressure drop range	Continuous	Every 15 minutes	Daily
Exit gas temperature	Maximum exit gas temperature	Continuous	Every 15 minutes	Daily
Inlet gas temperature	Minimum temperature difference between inlet and exit gas	Continuous	Every 15 minutes	Daily

For the operating parameter applicable to you, as specified in Table 3...	You must establish the following operating limit during your performance test...	And you must monitor, record, and demonstrate continuous compliance using these minimum frequencies.		
		Data measurement	Data recording	Data averaging period for compliance
Inlet liquid pressure	Minimum Inlet liquid pressure	Continuous	Every 15 minutes	Daily

**Table 5 to Subpart BB of Part 63—Calibration and Quality Control Requirements for Continuous Parameter Monitoring Systems (CPMS)**

If you monitor this parameter...	Your accuracy requirements are...	And your calibration requirements are...
<b>Temperature</b>	± 1 percent over the normal range of temperature measured or 2.8 degrees Celsius (5 degrees Fahrenheit), whichever is greater, for non-cryogenic temperature ranges.	Performance evaluation annually and following any period of more than 24 hours throughout which the temperature exceeded the maximum rated temperature of the sensor, or the data recorder was off scale. Visual inspections and checks of CPMS operation every 3 months, unless the CPMS has a redundant temperature sensor.  Selection of a representative measurement location.
<b>Flow Rate</b>	± 5 percent over the normal range of flow measured or 1.9 liters per minute (0.5 gallons per minute), whichever is greater, for liquid flow rate.  ± 5 percent over the normal range of flow measured or 28 liters per minute (10 cubic feet per minute), whichever is greater, for gas flow rate.  ± 5 percent over the normal range measured	Performance evaluation annually and following any period of more than 24 hours throughout which the flow rate exceeded the maximum rated flow rate of the sensor, or the data recorder was off scale. Checks of all mechanical connections for leakage monthly. Visual inspections and checks of CPMS operation every 3 months, unless the CPMS has a redundant flow sensor.  Selection of a representative measurement location where swirling flow or abnormal velocity

If you monitor this parameter...	Your accuracy requirements are...	And your calibration requirements are...
	for mass flow rate.	distributions due to upstream and downstream disturbances at the point of measurement are minimized.
<b>Pressure</b>	± 5 percent over the normal range measured or 0.12 kilopascals (0.5 inches of water column), whichever is greater.	<p>Checks for obstructions (e.g., pressure tap pluggage) at least once each process operating day.</p> <p>Performance evaluation annually and following any period of more than 24 hours throughout which the pressure exceeded the maximum rated pressure of the sensor, or the data recorder was off scale.</p> <p>Checks of all mechanical connections for leakage monthly.</p> <p>Visual inspection of all components for integrity, oxidation and galvanic corrosion every 3 months, unless the CPMS has a redundant pressure sensor.</p> <p>Selection of a representative measurement location that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.</p>

**Appendix A to Subpart BB of Part 63—Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart BB**

40 CFR citation	Requirement	Applies to subpart BB	Comment
§ 63.1(a) (1) through (4)	General Applicability	Yes.	None.
§ 63.1(a) (5)		No.	[Reserved] .

§ 63.1(a) (6)	Contact information	Yes.	None.
§ 63.1(a) (7) through (9)		No.	[Reserved] .
§ 63.1(a) (10) through (12)	Time periods	Yes.	None.
§ 63.1(b)	Initial Applicability Determination	Yes.	None.
§ 63.1(c) (1)	Applicability After Standard Established	Yes.	None.
§ 63.1(c) (2)	Permits	Yes.	Some plants may be area sources.
§ 63.1(c) (3) through (4)		No.	[Reserved] .
§ 63.1(c) (5)	Area to Major source change	Yes.	None.
§ 63.1(d)		No	[Reserved] .
§ 63.1(e)	Applicability of Permit Program	Yes.	None.
§ 63.2	Definitions	Yes.	Additional definitions in § 63.621.
§ 63.3	Units and Abbreviations	Yes.	None.
§ 63.4(a) (1) and (2)	Prohibited Activities	Yes.	None.
§ 63.4(a) (3) through (5)		No.	[Reserved] .
§ 63.4(b) and (c)	Circumvention/Fragmentation	Yes.	None.
§ 63.5(a)	Construction/Reconstruction Applicability	Yes.	None.
§ 63.5(b) (1)	Existing, New, Reconstructed Sources Requirements	Yes.	None.
§ 63.5(b) (2)		No.	[Reserved] .
§ 63.5(b) (3) , (4) , and (6)	Construction /Reconstruction approval and notification	Yes.	None.
§ 63.5(b) (5)		No	[Reserved]
§ 63.5(c)		No	[Reserved] .

§ 63.5(d)	Application for Approval of Construction/ Reconstruction	Yes.	None.
§ 63.5(e)	Approval of Construction/Reconstruction	Yes.	None.
§ 63.5(f)	Approval of Construction/Reconstruction Based on State Review	Yes.	None.
§ 63.6(a)	Compliance with Standards and Maintenance Applicability	Yes.	None.
§ 63.6(b) (1) through (5)	New and Reconstructed Sources Dates	Yes.	See also § 63.622.
§ 63.6(b) (6)		No.	[Reserved] .
§ 63.6(b) (7)	Area to major source change	Yes.	None.
§ 63.6(c) (1) and (2)	Existing Sources Dates	Yes.	§ 63.622 specifies dates.
§ 63.6(c) (3) and (4)		No.	[Reserved] .
§ 63.6(c) (5)	Area to major source change	Yes.	None.
§ 63.6(d)		No.	[Reserved] .
§ 63.6(e) (1) (i) and (ii)	Operation & Maintenance Requirements	No.	See § 63.628 (b) for general duty requirement
§ 63.6(e) (iii)		Yes.	None.
§ 63.6(e) (2)		No.	[Reserved]
§ 63.6(e) (3)	Startup, Shutdown, and Malfunction Plan	No.	None.
§ 63.6(f)	Compliance with Emission Standards	No.	See general duty at § 63.628 (b)
§ 63.6(g)	Alternative Standard	Yes.	None.
§ 63.6(h)	Compliance with Opacity/VE Standards	No.	Subpart BB does not include VE/opacity standards.
§ 63.6(i) (1) through (14)	Extension of Compliance	Yes.	None.

§ 63.6(i) (15)		No.	[Reserved] .
§ 63.6(i) (16)		Yes.	None.
§ 63.6(j)	Exemption from Compliance	Yes.	None.
§ 63.7(a)	Performance Test Requirements Applicability	Yes.	None.
§ 63.7(b)	Notification	Yes.	None.
§ 63.7(c)	Quality Assurance/Test Plan	Yes.	None.
§ 63.7(d)	Testing Facilities	Yes.	None.
§ 63.7(e) (1)	Conduct of Tests; startup, shutdown and malfunction provisions	No.	§ 63.626 specifies additional requirements.
§ 63.7(e) (2) through (4)	Conduct of Tests	Yes.	§ 63.626 specifies additional requirements.
§ 63.7(f)	Alternative Test Method	Yes.	None.
§ 63.7(g)	Data Analysis	Yes.	None.
§ 63.7(h)	Waiver of Tests	Yes.	None.
§ 63.8(a)	Monitoring Requirements Applicability	Yes.	None.
§ 63.8(b)	Conduct of Monitoring	Yes.	None.
§ 63.8(c) (1) (i)	General duty to minimize emissions and CMS operation	No.	See § 63.628 (b) for general duty requirement
§ 63.8(c) (1) (ii)		Yes.	None.
§ 63.8(c) (1) (iii)	Requirement to develop SSM Plan for CMS	No.	None.
§ 63.8(c) (2) through (4)	CMS Operation/Maintenance	Yes.	None.
§ 63.8(c) (5)	COMS Operation	No.	Subpart BB does not require COMS
§ 63.8(c) (6) through (8)	CMS requirements	Yes.	None.

§ 63.8(d) (1) and (2)	Quality Control	Yes.	None.
§ 63.8(d) (3)	Written procedure for CMS	No.	See § 63.628(d) for requirement
§ 63.8(e)	CMS Performance Evaluation	Yes.	None.
§ 63.8(f) (1) through (5)	Alternative Monitoring Method	Yes.	None.
§ 63.8(f) (6)	Alternative to RATA Test	No.	Subpart BB does not require CEMS.
§ 63.8(g) (1)	Data Reduction	Yes.	None.
§ 63.8(g) (2)		No.	Subpart BB does not require COMS or CEMS
§ 63.8(g) (3) through (5)		Yes.	None.
§ 63.9(a)	Notification Requirements Applicability	Yes.	None.
§ 63.9(b)	Initial Notifications	Yes.	None.
§ 63.9(c)	Request for Compliance Extension	Yes.	None.
§ 63.9(d)	New Source Notification for Special Compliance Requirements	Yes.	None.
§ 63.9(e)	Notification of Performance Test	Yes.	None.
§ 63.9(f)	Notification of VE/Opacity Test	No.	Subpart BB does not include VE/opacity standards.
§ 63.9(g)	Additional CMS Notifications	Yes.	None.
§ 63.9(h) (1) through (3)	Notification of Compliance Status	Yes.	None.
§ 63.9(h) (4)		No.	[Reserved] .
§ 63.9(h) (5) and (6)		Yes.	None.
§ 63.9(i)	Adjustment of Deadlines	Yes.	None.

§ 63.9(j)	Change in Previous Information	Yes.	None.
§ 63.10(a)	Recordkeeping/Reporting-Applicability	Yes.	None.
§ 63.10(b)(1)	General Recordkeeping Requirements	Yes.	None.
§ 63.10(b)(2)(i)	Startup or shutdown duration	No.	None.
§ 63.10(b)(2)(ii)	Malfunction	No.	See § 63.627 for recordkeeping and reporting requirement
§ 63.10(b)(2)(iii)	Maintenance records	Yes.	None.
§ 63.10(b)(2)(iv) and (v)	Startup, shutdown, malfunction actions	No.	None.
§ 63.10(b)(2)(vi) through (xiv)	General Recordkeeping Requirements	Yes.	None.
§ 63.10(b)(3)	General Recordkeeping Requirements	Yes.	None.
§ 63.10(c)(1)	Additional CMS Recordkeeping	Yes.	None.
§ 63.10(c)(2) through (4)		No.	[Reserved] .
§ 63.10(c)(5)		Yes.	None.
§ 63.10(c)(6)		Yes.	None.
§ 63.10(c)(7) and (8)		Yes.	None.
§ 63.10(c)(9)		No.	[Reserved] .
§ 63.10(c)(10) through (13)		Yes.	None.
§ 63.10(c)(14)		Yes.	None.
§ 63.10(c)(15)	Startup Shutdown Malfunction Plan Provisions	No.	None.
§ 63.10(d)(1)	General Reporting Requirements	Yes.	None.
§ 63.10(d)(2)	Performance Test Results	Yes.	None.



§ 63.10(d)(3)	Opacity or VE Observations	No.	Subpart BB does not include VE/opacity standards.
§ 63.10(d)(4)	Progress Reports	Yes.	None.
§ 63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	No.	See § 63.627 for reporting of excess emissions
§ 63.10(e)(1) and (2)	Additional CMS Reports	Yes.	None.
§ 63.10(e)(3)	Excess Emissions/CMS Performance Reports	Yes.	None.
§ 63.10(e)(4)	COMS Data Reports	No.	Subpart BB does not require COMS.
§ 63.10(f)	Recordkeeping/Reporting Waiver	Yes.	None.
§ 63.11	Control Device and Work Practice Requirements	Yes.	None.
§ 63.12	State Authority and Delegations	Yes.	None.
§ 63.13	Addresses	Yes.	None.
§ 63.14	Incorporation by Reference	Yes.	None.
§ 63.15	Information Availability/Confidentiality	Yes.	None.
§ 63.16	Performance Track Provisions	No.	Terminated